CALIFORNIA COASTAL COMMISSION
South Coast Area Office
200 Oceangate, Suite 1000
Long Beach, CA 90802-4302
(562) 590-5071

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Commission Action:	

M8a

STAFF REPORT: PERMIT AMENDMENT

APPLICATION NUMBER: A5-IRC-99-301-A1

APPLICANT: Irvine Community Development Company

AGENT: M. Andriette Culbertson, Culbertson and Adams

PROJECT LOCATION: Southern Coastal Orange County, North of PCH, West of Crystal Cove State Park and East of the City of Newport Beach, Irvine Coast (Newport Coast), Orange County

DESCRIPTION OF PROJECT PREVIOUSLY APPROVED:
Seventh Amendment to the Master Coastal Development Permit for the Newport Coast Planned Community (NCPC). Approved development includes mass grading, backbone infrastructure for future residential and recreational development in Planning Areas (PA) 4A, 4B, 5 (and the northeastern portion of PA 2C), 6, 12C, offer to dedicate open space areas PA 12E (Muddy Canyon) and 12G (Moro Sliver) and approval of a proposed revised Vesting Tentative Tract Map 15447. Also approve was 1.6 acres Needlegrass restoration to mitigate the loss of 0.4 acres of Needlegrass and wetlands and riparian mitigation totaling approximately 3 acres to mitigate impacts to 0.0529 acres of wetlands impacts and approx. seven miles of “non-wetlands waters of the U.S.”.

The approved water quality enhancement program and drainage facilities affect PA 3A, 3B, 4A, 4B, 5, 6, 12C, 14, and portions of 1C, 2B, 2C, 10B, 11B, 13A and 13F, as more fully described in the Master Drainage and Water Quality Enhancement Plan, dated 7/24 /00 and those measures proposed and attested to by the applicant at the August 10, 2000 hearing. The approved development discharges runoff into Los Trancos and Muddy Canyon Creeks. Existing storm drain pipes and culverts installed by Caltrans during construction of Pacific Coast Highway will not be utilized for either low flows or storm flows from the appeal area portion of the project, with the exception of the Caltrans storm drain pipes and culverts at Los Trancos, Muddy Creek, and the 30 inch RCP that drains into Los Trancos Creek. No drainage from the project will be discharged directly

to the Area of Special Biological Significance (ASBS), and/or over the bluffs, and onto the beach through the PCH pipes or culverts.

Mass grading, including remedial earthwork was approved totaling 48,191,680 cubic yards. Areas outside of the original appeal area, specifically 2C, 15 and 17, will also be graded. Minor boundary adjustments to Planning Areas PA 2C, 3A, 3B, 4A, 4B, 5, 6, 12A, 12B, 12E, and 14 as submitted on June 23, 2000 were approved. Technical revisions to revised VTTM 15447 and to specified Orange County approved Vesting Tentative Tract Maps to reflect the grading adjustments required by the new drainage and runoff control plans are also proposed.

The approved project will also be undertaken and maintained consistent with the July 27, 2000 letter to Tim La Franchi of State Parks and Recreation from Daniel C. Hedigan of The Irvine Company.

DESCRIPTION OF PROPOSED AMENDMENT:
Modification to the approved master drainage and runoff control plan resulting in the elimination of all flows from any portion of the Newport Coast Planned Community (the original Appeal Areas and Non-Appeal Areas) to the existing 30-inch storm drain pipe, the 3 foot by 4 foot box culvert and the 24-inch storm drain pipe. These changes are being proposed in order to comply with Cease and Desist Order No. 00-87 of the California Regional Water Quality Control Board. Specifically, the applicant proposes to reroute and enlarge certain approved storm drain pipes and to enlarge and redesign Detention Basin 6 and add a new detention basin (#7) located in the original Non-Appeal Areas (Planning Areas (PA) 3A, 3B and 14) in order to redirect all storm flows and non-storm water runoff from the above existing pipes and culverts to Los Trancos and Muddy Canyon creeks.

The applicant further proposes changes to water quality Special Conditions 14 through 19 of the approved coastal development permit due to the above proposed changes to the master drainage and runoff control plans or due to newly discovered information indicating difficulty in accessing and maintaining flow-weighted equipment required in Special Condition 16.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends that the Commission APPROVE the proposed amendment request subject to the special conditions of the original coastal development permit A5-IRC-99-301 and with further revisions to the water quality special conditions 14 through 19 that are necessary to assure that the development as amended will be in conformance with the Marine Resources protection policies of the Newport Coast (formerly Irvine Coast) LCP.

SUBSTANTIVE FILE DOCUMENTS:

See Appendix A

PROCEDURAL NOTE

A. Coastal Development Permit Amendments

The Commission's regulations provide for referral of permit amendment requests to the Commission if:

1) The Executive Director determines that the proposed amendment is a material change,

2) Objection is made to the Executive Director's determination of immateriality, or

3) The proposed amendment affects conditions required for the purpose of protecting a coastal resource or coastal access.

If the applicant or objector so requests, the Commission shall make an independent determination as to whether the proposed amendment is material. 14 Cal. Admin. Code 13166.

The subject application is being forwarded to the Commission because the Executive Director has determined that the proposed amendment is a material change and affects conditions required for the purposes of protecting coastal resources or coastal access.

I. STAFF RECOMMENDATION, MOTION AND RESOLUTION OF APPROVAL

Staff recommends that the Commission make the following motion and adopt the following resolution to APPROVE the amendment application with special conditions.

MOTION

I move that the Commission approve CDP Amendment A5-IRC-99-301-A1 pursuant to the staff recommendation.

Staff recommends a YES vote. Passage of this motion will result in adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION OF APPROVAL WITH CONDITIONS

The Commission hereby **APPROVES** the amendment to Coastal Development Permit A5-IRC-99-301, subject to the conditions below, for the proposed development on the grounds that the development would be in conformity with the certified Local Coastal Program and is in conformance with the public access and public recreation policies of Chapter 3 of the Coastal Act, and would not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

II. Standard Conditions

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

III. Special Conditions

The permit is subject to the following conditions:

A. New Special Conditions:

21. PRIOR CONDITIONS

Unless specifically altered by this amendment, all special conditions of coastal development permit A5-IRC-99-301 remain in effect. Special conditions 1 through 13 and 20 of the coastal development permit are not modified by this amendment action (See Attachment B).

B. Special Conditions Modified by this Permit Amendment:

The following special conditions, 14 – 19, are amended as specified below. New language is shown in underline and existing language to be deleted is shown in ~~strikethrough.~~

14. PERMANENT WATER QUALITY CONTROL PLAN REQUIRED FOR PROPOSED DEVELOPMENT IN PLANNING AREAS 3A, 3B, 4A, 4B, 5, 6, 12B ~~AND~~ 12C, AND 14

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit final Water Quality Control Plans for Planning Areas 3A, 3B, 4A, 4B, 5, 6, 12B, ~~and~~ 12C, and 14 for the review and approval of the Executive Director.

A. The final Water Quality Control Plan shall be designed in accordance with all applicable State, County and Regional regulations to ensure compliance with all applicable State, County and Regional water quality objectives or standards, including but not limited to the following:

1) Pollutants in stormwater shall be reduced to the maximum extent practicable through the use of BMPs.

2) Implementation of the project shall not create a nuisance or pollution as defined in the California Water Code.

3) The project shall not cause a violation of any applicable water quality standard for receiving waters adopted by the RWQCB or the SWRCB, as required by the Clean Water Act, or the Porter-Cologne Water Quality Control Act, including but not limited to any applicable standards in the California Toxics Rule and the California Ocean Plan.

4) The discharge of any substance in concentrations toxic to animal or plant life is prohibited.

B. The Final Water Quality Control Plans shall incorporate: (1) the source and treatment control Best Management Practices (BMPs) and other water quality measures in the amount, type and physical location proposed and specified in the *Newport Coast Planned Community, Crystal Cove Stormwater Quality Evaluation Report,* dated 6/14/00, and letter amendment thereto dated January 18, 2001, and graphically depicted in the *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets), dated ~~7/24/00~~ January 18, 2001 (as modified by Special Condition 18) and (2) those measures with specification described below. Such measures include, but are not

limited to the following types, which shall be implemented consistent with the above requirements:

1) Non-structural Best Management Practices (BMPs) including but not limited to:

   a) Fertilizer and Organic Soils Management,
   b) Advanced street sweeping and litter pick-up,
   c) Homeowner education regarding Nonpoint Source pollution and proper use of pesticides.

2) Routine structural BMPs:

   a) Inlet trash racks,
   b) Energy dissipaters on stormwater outfalls,
   c) Efficient irrigation technology,
   d) Vegetated swales,
   e) Extended detention ponds, ~~and~~
   f) Catch basin media filters,
   g) Regional Drainpacs shall be sized using a rating of 25% rather than 50% of hydraulic conductivity, thus doubling the size of the filter surfaces area proposed, and
   h) Detention Basins 6 and 7 ~~basins 1, 2, 3 and 6~~ shall be designed in a manner which demonstrates that high flows will not flush out the material retained during the low flow first flush.

C. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission-approved ~~commission~~ amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

15. **ADDITIONAL WATER QUALITY MITIGATION MEASURES PROPOSED FOR PLANNING AREAS 3A, 3B, 4A, 4B, 5, 6, 12C, 14 AND PORTIONS OF 1C, 2B, 2C, 10B, 11B, 13A AND 13F**

A. **CONSISTENT WITH THE TERMS OF THE PROPOSED PROJECT AND PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant is required to submit final water quality control plans for the review and approval of the Executive Director, demonstrating compliance with all of the requirements specified below:

B. The applicant is required to implement: (1) the water quality measures proposed for Planning Areas 2C, 3A, 3B and 14, in the amount, type and location proposed and specified in ~~and~~ the *Newport Coast Planned Community Stormwater Quality Evaluation Report,* dated 6/14/00, and letter amendment thereto dated January 18, 2001, and graphically depicted in the *Master Drainage and Water Quality*

Enhancement Program (MDWQEP) for the Newport Coast Planned Community (6 sheets) dated January 18, 2001 ~~7/24/00~~ (as modified by Special Condition 18), and described here and (2) those measures with specifications described below:

(i) Non-structural Best Management Practices (BMPs) including but not limited to:

a) Fertilizer and Organic Soils Management,
b) Advanced street sweeping and litter pick-up,
c) Homeowner education regarding Nonpoint Source pollution and proper use of pesticides.

(ii) Routine structural BMPs:

a) Vegetated swales
b) Extended detention ponds,
c) Storm water flow from PA 3A, PA 3B, PA 4A, PA 4B, and PA 14 ~~PAs 3A, 3B, and 14~~ shall either be routed to the proposed extended detention basins (Basins 6 and 7) ~~basin (basin No. 6)~~ or shall receive the benefit of filtration through Drainpac ~~Drainpak~~ filter insert devices installed in catch basins or water quality inlets receiving drainage from PAs 3A, 3B, and 14, all as shown in the MDWQEP dated January 18, 2001.

(i) Regional Drainpacs ~~Drainpaks~~ shall be sized using a rating of 25% of hydraulic conductivity.

d) A clarifier at the service station if the station is built.

C. Concurrent with the first phase of construction as indicated on the August 9, 2000 Phasing Plan, the applicant is required to construct and fully implement a dry-weather diversion system designed to accommodate dry weather nuisance flows from Planning Areas 3A, 3B, 4A, 4B, 5, 6, 12C, 14 and the portions of 1C, 2B, 2C, 10B, 11B, 13A and 13F which drain into Los Trancos or Muddy Canyon during the period of April 15 through October 31st of each year for the life of the project, as proposed and specified in ~~and~~ the *Stormwater Quality Evaluation Report,* dated 6/14/00 and letter amendment thereto dated January 18, 2001, and graphically depicted in the *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets) dated January 18, 2001 ~~7/24/00~~ (as modified by Special Condition 18), and described below:

(i) The diversion system shall be designed to intercept and divert dry weather nuisance flows from Planning Areas 3A, 3B, 4A, 4B, 5, 6, 12B, 12C, 14 and the portions of 1C, 2B, 2C, 10B, 11B, 13A and 13F which drain into Los Trancos or Muddy Canyon, as proposed, during the period of April 15 through October 31st of each year for the life of the project, and convey these nuisance flows to the publicly owned treatment works operated by the Orange County Sanitation District (OCSD).

(ii) The applicant or successor in interest will be responsible for the long-term operation and maintenance of the diversion system. This includes any

necessary improvements, physical or otherwise, to the diversion system, and ongoing maintenance and repair, in order to ensure compliance with the requirements and provisions of this condition. The applicant shall provide evidence of a sufficient funding mechanism or allocation, to uphold requirements of this condition.

D. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall obtain, and submit to the satisfaction of the Executive Director, a binding agreement with the Orange County Sanitation District (OCSD) and the Irvine Ranch Water District (IRWD), verifying the District's capacity and commitment to accept dry-weather nuisance flow runoff from Planning Areas 3A, 3B, 4A, 4B, 5, 6, 12C, 14 and the portions of 1C, 2B, 2C, 10B, 11B, 13A and 13F which drain into Los Trancos or Muddy Canyon during the period of April 15 through October 31st of each year for the life of the project, for treatment in the wastewater collection system at the Treatment Plant. Diversion, as specified above, shall commence concurrent with the first phase of construction as indicated on the August 9, 2000 Phasing Plan.

E. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of Special Condition 15C. The deed restriction shall include a legal description of Planning Areas 3A, 3B, 4A, 4B, 5, 6, 12C, 14, and the portions of 1C, 2B, 2C, 10B, 11B, 13A, and 13F which drain into Los Trancos or Muddy Canyon. The deed restriction shall run with the land binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. The deed restriction shall not be removed or changed without a Commission-approved amendment to this coastal development permit.

F. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

16. BMP MAINTENANCE AND MONITORING PLAN FOR PROPOSED AND REQUIRED MITIGATION MEASURES

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit a Maintenance and Monitoring Plan for Nonpoint Source Best Management Practices required by and specified in Special Conditions 14 and 15 of this permit, which are located in or accommodate development in Planning Areas 2C, 3A, 3B, 4A, B, 5, 6, 12B, 12C and 14 for the review and written approval of the Executive Director.

B. The Maintenance Plan shall be designed to ensure that all approved BMPs which are located in or accommodate development in Planning Areas 2C, 3A, 3B, 4A, 4B, 5, 6, 12B, 12C and 14, with the exception of the dry weather nuisance flow diversion which is governed by Special Condition 15, are maintained and monitored in accordance with maintenance and monitoring recommendations contained in the *California Storm Water Best Management Practices Handbooks* and Section 5.2 of the *Newport Coast Planned Community, Crystal Cove Stormwater Quality Evaluation Report (SWQER)*, dated June 14, 2000 and letter amendment thereto dated January 18, 2001 ~~June 14, 2000~~ and shall ensure that:

1. The applicant/owner or successor in interest shall be responsible for regular maintenance including inspection and regular cleaning of all approved BMPs which are located in or accommodate development in Planning Areas 2C, 3A, 3B, 4A, 4B, 5, 6, 12C and 14, with the exception of the dry weather nuisance flow diversion which is governed by Special Condition 15, to ensure their effectiveness prior to and during each rainy season from October 15 through April 15 of each year, for the life of the project. Debris and other water pollutants contained in BMP filters or devices must be contained and disposed of in a proper manner on a regular basis. All BMP traps/separators and/or filters must be inspected, cleaned and replaced when necessary in accordance with the specific recommendations of Section 5.2.2 of the SWQER cited above, and at a minimum, prior to the start of the winter storm season, no later than October 15th each year.

   (a) Annual reports documenting inspection and maintenance activities shall be submitted to the Coastal Commission no later than June 30th of each year. The reports shall include date, time and location of all inspections, and any textual or graphic documentation necessary to support maintenance activity undertaken or lack thereof where unnecessary.

C. The applicant shall submit final plans for conducting post-development monitoring as proposed by the applicant pursuant to an agreement with the RWQCB. The plan shall be based on the scope recommended in Section 5.2.3 of the SWQER cited above, specifically:

1. A flow-weighted composite sampling approach shall be utilized to sample runoff water quality in Muddy Canyon downstream of Basin #6 ~~the extended detention pond~~ and Basin 2, from three storms per year. In the event that storm or site conditions prevent the safe collection of flow-weighted samples downstream of Basin 2, then composited grab samples may be taken downstream of Basin 2 for three storms per year.

2. The post-development monitoring as specified above, and required by this ~~in this~~ special condition, shall be conducted for a minimum period of 2 years, following completion of development. If water quality is found to be acceptable by the Executive Director in consultation with the RWQCB staff based on a comparison

with in-stream aquatic life water quality standards, and any other applicable receiving water quality standards as determined by the SWRCB or RWQCB, monitoring shall be terminated at the end of the 2 year period. If a particular pollutant is found in concentrations considered unacceptable by the RWQCB due to applicable water quality standards including, but not limited to, any applicable standards in the California Toxics Rule and the California Ocean Plan, the applicant shall conduct an assessment of the potential sources of the pollutant and potential remedies. If it is determined based on this assessment that applicable water quality standards have not been met as a result of inadequate or failed BMPs, corrective actions or remedies shall be required.

3. If potential remedies or corrective action constitute development, as defined by Section 30106 of the Coastal Act, an amendment to this permit shall be required, unless the Executive Director determines no such amendment is required.

4. Results of this monitoring effort shall be submitted to the Coastal Commission upon availability.

D. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

E. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall execute and record a deed restriction, in a form and content acceptable to the Executive Director incorporating all of the above terms of Special Condition 16B. The deed restriction shall include a legal description of Planning Areas 3A, 3B, 4A, 4B, 5, 6, 12C, and 14. The deed restriction shall run with the land binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. The deed restriction shall not be removed or changed without a Commission-approved amendment to this coastal development permit.

17. WATER QUALITY AND MARINE ECOLOGICAL MONITORING PLAN FOR THE CRYSTAL COVE DEVELOPMENT PROJECT

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit a final *Water Quality and Marine Ecological Monitoring Plan for the Crystal Cove Development Project*, for the review and written approval of the Executive Director, designed to characterize and evaluate the potential effects of stormwater and non-stormwater runoff from the proposed development on receiving waters and ecological resources associated with the inland streams in Muddy Canyon and Los Trancos Canyon, and ocean waters in Crystal Cove.

B. The *Water Quality and Marine Ecological Monitoring Plan for the Crystal Cove Development Project* shall include the following components:

1) A Quality Assurance/Quality Control Plan that includes reporting limits for the constituents shown in the following section C1-7 that are below the Water Quality Objectives (WQOs) that have been identified by the RWQCB, where detection of such limits is reasonably attainable through standard practice and methods. If no WQOs are available, then the reporting limits should be below acute and chronic toxicity levels for the test species indicated in Section C8-9 below where reasonably feasible.

2) An accurate and legible map of the proposed sampling locations as follows: identify four monitoring stations each in Muddy Canyon, Los Trancos Canyon and Emerald Canyon based on criteria established in subsections 17.B.(2)(1-4) below. ~~and; an additional monitoring station shall be established at the mouth of Los Trancos Canyon, as more fully described in subsection 17.B.(2)(5) below, resulting in a total of 4~~ 5 monitoring stations required for the Los Trancos ~~watershed exclusively.~~ The following four sampling stations are intended to represent four locations within each respective watershed: 1) upstream from significant development or future development, 2) near the mouth of the watershed, but above Pacific Coast Highway (in Los Trancos Canyon, at a point which will allow sampling of discharge from the 48" pipe), 3) in the surf zone adjacent to the mouth of the watershed, and 4) beyond the surf zone where the water is 20 feet deep at Mean Lower Low Water. ~~Exclusive to the Los Trancos watershed, an additional monitoring location recognized and identified herein as a fifth station shall be established as follows: 5) on the seaward side of Pacific Coast Highway, at the mouth of the watershed, directly downstream of the auto bridge in the Crystal Cove Historic District, at a point which will allow sampling of discharge from the 48" RCP and the 30" CMP above the surf zone.~~

3) If ~~Should~~ monitoring results indicate that incidents are occurring in which applicable water quality standards are not being met and/or that recurring ~~reoccurring~~ incidents are threatening to establish a condition in which applicable water quality standards are not being met, the applicant shall investigate the cause or source of the incidents and/or condition and provide information to the Executive Director demonstrating any incidents and/or resulting condition in which applicable water quality standards have not been met is not the result of applicant's failure to comply with the terms and conditions of this Permit. If ~~Should~~ the Executive Director determine, otherwise, based on the information generated from the applicant's investigation and all other information available to the Executive Director, corrective actions or remedies shall be required. If remedies or corrective actions constitute development under ~~Coastal Act~~ Section 30106 of the Coastal Act, an amendment to this Permit shall be required, unless the Executive Director determines no such amendment is required.

C. The *Water Quality and Marine Ecological Monitoring Plan for the Crystal Cove Development Project* shall utilize the following parameters:

1. SAMPLING AND ANALYSIS FOR PATHOGEN INDICATOR BACTERIA:
   Sampling for total and fecal coliforms and enterococci at all stations during storm and dry-weather runoff. Analysis of additional Orange County data for same study locations and adjacent sites.

2. SAMPLING AND ANALYSIS FOR PHYSICAL CONSTITUENTS OF RUNOFF:
   Total suspended solids (TSS), Total dissolved solids (TDS), Freshwater hardness, Salinity, Standard observations of water clarity, color, degree of turbidity, and debris.

3. SAMPLING AND ANALYSIS FOR TRACE (HEAVY) METALS:
   Full sampling at all stations for the 7 trace metals cadmium, chromium, copper, lead, nickel, silver, and zinc in both their total and dissolved forms.

4. SAMPLING AND ANALYSIS FOR PESTICIDES:
   Full sampling at all stations for 26 organophosphorus pesticide compounds, including chlorpyrifos, diazinon, malathion, and parathion.

5. SAMPLING AND ANALYSIS FOR NUTRIENT CHEMICALS:
   Full sampling at all stations for Nitrate + nitrite, Total Kjeldahl nitrogen, Total phosphorus, Dissolved phosphorus.

6. SAMPLING AND ANALYSIS FOR PETROCHEMICALS:
   Total recoverable oil and grease at all stations.

7. SAMPLING AND ANALYSIS FOR DRY-WEATHER RUNOFF:
   Sampling once per month in each watershed exhibiting such runoff. All of the above described microbiological, physical and chemical constituents analyzed.

8. TOXICITY BIOASSAYS FOR STORM RUNOFF:
   Acute (48 – 96 hr) toxicity testing using initial runoff water to assess its effects on a freshwater daphniid crustacean indicator species and a marine mysid crustacean indicator species. Testing conducted with water sampled during three representative storm events.

9. TOXICITY BIOASSAYS FOR DRY-WEATHER RUNOFF:
   Acute (48 hr) and Chronic (7 day) toxicity testing in which a freshwater daphniid crustacean indicator species is exposed to dry-weather runoff water. Testing conducted 3-4 times per year for each watershed exhibiting runoff.

10. QUANTITATIVE ECOLOGICAL STUDIES OF ROCKY INTERTIDAL HABITATS NEAR MOUTHS OF THE THREE WATERSHED CANYONS:

a) Before and after storms, repeated sampling of the same groups of individuals in mussel and sea anemone indicator species associations (template photo quadrat sampling) to evaluate possible changes in relation to runoff.
b) Before and after storms, repeated sampling of five different indicator species groups (invertebrates and algae). Randomly placed photo quadrats used to determine possible storm-related and other changes in species composition and abundance.
c) Before and after storms, repeated sampling of algal epiphytes (species composition and % cover) living attached to surfgrass. These epiphytes are good indicators of higher than normal nutrient chemical concentrations.

11. QUANTITATIVE ECOLOGICAL STUDIES OF ROCKY SUBTIDAL HABITATS OFFSHORE OF THE THREE WATERSHED CANYONS:
    a) Before and after storms, repeated sampling of several different indicator species groups (invertebrates and marine plants). Randomly placed photo quadrats used to determine possible storm-related and other changes in species composition and abundance. Depth 20 ft MLLW.
    b) Before and after storms, repeated sampling of algal epiphytes (species composition and % cover) living attached to surfgrass. Depth 20 ft MLLW. These epiphytes are good indicators of higher than normal nutrient chemical concentrations.

D. Quarterly reports containing data, and analytical assessment of data in comparison to any applicable water quality objectives and other criterion as specified herein, shall be submitted to the Coastal Commission, upon completion of each report.

E. The monitoring plan shall be approved based on consistency with the specifications herein. The monitoring plan conditionally required and approved by this coastal development permit shall be conducted for a period of 5 years. The date of December 15, 1999 shall be considered the commencement date for monitoring for the proposed development, for purposes of calculating the duration required for conducting monitoring in accordance with the plan specified above, and approved under this coastal development permit.

F. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission-approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

18. **REVISED MASTER DRAINAGE AND WATER QUALITY ENHANCEMENT PROGRAM**

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit a revised version of the proposed *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets) Volume1 and II, dated January 18, 2001. ~~7/24/00.~~ The plan shall be revised based on the following and shall demonstrate conformance with the following requirements, both narratively and through graphic illustration:

1. All inconsistencies between the proposed *Master Drainage and Water Quality Enhancement Program (MDWQEP) for the Newport Coast Planned Community* (6 sheets) Volumes1 and II, dated January 18, 2001 ~~7/24/00~~ and the program described and evaluated in the *Newport Coast Planned Community, Crystal Cove Stormwater Quality Evaluation Report* dated 6/14/00 and letter amendment thereto dated January 18, 2001 shall be resolved in a manner which is in substantial conformance with the water quality program described and evaluated in the *Stormwater Quality Evaluation Report* dated 6/14/00 ~~6/14/00~~, and letter amendment thereto dated January 18, 2001 including those measures which are proposed and described in the report, but which were not modeled.

2. The final *Master Drainage and Water Quality Enhancement Program* plans shall be consistent with all final conditions of approval contained herein, pertaining to proposed and required water quality management measures.

3. The final *Master Drainage and Water Quality Enhancement Program* plans shall clearly illustrate where all runoff from the project is being discharged and what level of treatment, if any, it is receiving prior to drainage.

19. FLOW METER DETECTION DEVICES

A. **PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for the review and written approval of the Executive Director, final water quality control plans prepared by an appropriate licensed professional, which incorporate design specifications for the installation of flow meter detection devices and provisions for implementation of the flow meter detection monitoring and reporting activities described herein, and which demonstrate compliance with all of the following subsections:

B. The flow meter devices shall be engineered and installed to detect and estimate runoff from PAs proposed for diversion pursuant to Special Condition 15(C), specifically 3A, 3B, 4A, 4B, 5, 6, 12C, 14 and portions of 1C, 2B, 2C, 10B, 11B, 13A and 13, which are instead being discharged ~~onto the beach or~~ into Los Trancos Creek or Muddy Creek during the dry-weather season (April 15 through October

31st). The devices shall be located in the Los Trancos and Muddy Canyon low flow diversion pump wells. ~~and/or in pipes or culverts downstream of the pump wells, situated at a point capable of detecting and metering dry-weather flow discharging onto the beach and in Los Trancos and Muddy Creek as a result of the failure or otherwise inadequate operation of the low-flow diversion system.~~ Upon installation, these devices shall be capable of detecting discharge of flow during the dry-weather season (April 15th through October 31st) ~~onto the beach and~~ into the creeks (Muddy and Los Trancos), at a rate of no less than 15 gallons per minute (gpm) and shall provide estimates of flow rates that exceed 15 gpm. The devices must be installed and functional prior to the first dry-season (April 15 through October 31st) in which the dry-weather diversion system required by Special Condition 15 is in operation.

C. Monitoring and Reporting Requirements

1) The flow meters shall be engineered to transmit a flow detection signal to the applicant/or successor in interest when flow above 15 gpm is detected.

2) The applicant or successor in interest must have in place a system for monitoring or receiving transmission on a daily basis. The applicant or successor in interest shall be responsible for recording any incidents of flow detection above 15 gpm in a logbook with the date, time, location, estimate of flow rate in gallons per minute and duration of incident.

3) The applicant or successor in interest is responsible for conducting a site visit during the dry weather season (April 15th – October 31st), for the purposes of investigating flow (if any) which may be discharging to ~~on to the beach directly, or by way of~~ the Creeks, at a rate less than 15 gpm. If flow is visually or otherwise observed, an investigation shall be undertaken to identify the source of the flow. If the investigation reveals the source of the flow to be nuisance runoff not attributable to a rainfall event from any of the Planning Areas cited in 19(B), the applicant shall proceed with actions outlined in 19(C)(4)(1). Site visits shall be recorded in a logbook and include the information noted in 19(C)(2).

4) Upon receipt of a flow detection signal, the applicant is responsible for notifying the Executive Director of the incident, and conducting an investigation of the cause and/or source of the incident. Pursuant to the investigation, corrective actions shall be taken to: 1) remedy any incident that is attributable to the fault, malfunction or other inadequacy of the diversion system and associated plumbing required by Special Condition 15(C), and which is not attributable to a rainfall event; and 2) prevent future discharge of flow which is required for diversion pursuant to Special Condition 15(C), ~~to the beach and/or~~ to Los Trancos Creek and/or Muddy Creek during the dry season (April 15th through October 31st). If potential remedies or corrective action constitute development, as defined by Section 30106 of the Coastal Act, an amendment to this permit shall be required, unless the Executive Director determines no such amendment is required.

5) In the event flow detection response activity is triggered pursuant to 19(C)(3) or (4), the applicant or successor in interest shall submit a summary report to the Executive Director within 30 days of the dry-weather season (October 31st). The summary report shall include the following information:
   a) Date and time of any flow detection incidents;
   b) Location of incident;
   c) Duration of incident;
   d) Estimates of flow rates; and
   e) Detailed description of flow detection response activity, e.g. investigation discoveries, corrective action taken.

6) The applicant or successor in interest will remain responsible for: a) maintaining the flow meter detection devices and associated system in a functional condition for the life of the project; and (b) monitoring/recording information and flow detection response activity as specified above for the life of the project. Information logs shall be made available to the public upon request.

D. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant, Irvine Community Development Company, shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission-approved amendment to this coastal development permit.

IV. Findings and Declarations

The Commission hereby finds and declares:

The Commission herein incorporates the findings and declarations of the Revised Findings staff report for coastal development permit A5-IRC-99-301 dated February 22, 2001.

A. PROJECT HISTORY

Coastal Commission action began on the subject site with an appeal of a coastal development permit issued by the local government. At a public hearing on October 12, 1999, the Commission determined that **a substantial issue existed** with respect to the local government's approval of coastal development permit PA 97-0152 on the grounds that the approval did not conform to the Newport Coast (formerly Irvine Coast) certified Local Coastal Program (LCP). The areas subject to the appeal were Planning Areas (PA)

4A, 4B, 5 and the northeastern portion of 2C, 6, 12C 12E and 12G (original Appeal Areas).

The de novo portion of the appeal was scheduled for the January 12, 2000 Commission meeting. Staff recommended that the Commission deny the project as it was previously proposed on the grounds that it was inconsistent with the environmentally sensitive habitat area (ESHA), Erosion, Sediment, and Runoff policies of the certified LCP. The applicant requested the use of their automatic right to postpone the hearing. At that hearing, the Commission requested that the applicant fund an independent third party review to assist Commission staff in the review of technical reports that were necessary to determine if the chosen project was the least environmentally damaging alternative and for a proper analysis of the potential impacts of the proposed project. The applicant agreed to fund such a review. The hearing was then postponed at the request of the applicant.

Prior to the January 2000 Commission meeting the applicant made several project modifications that had not been a part of the project approved by the local government. The modifications included a comprehensive water quality enhancement program and a wetlands/riparian enhancement program. The water quality enhancement program includes a new detention basins, regional Drainpacs and other BMPs located within the Appeal Area as well as within Planning Areas outside of the original Appeal Area. The Planning Areas outside of the original Appeal Area that will be included in the water quality enhancement program are 3A, 3B, 14 and potions of 1C, 2B, 2C, 10B, 11B, 12B, 13A and 13F.

The applicant also amended the de novo application to eliminate two of the issues on which the Commission found substantial issue, namely the deletion of the Commission's appeal jurisdiction and the also obtained permission from the Department of Parks and Recreation to apply for the construction of the previously proposed detention basin, stream course fill for a private access road and the installation of water quality structures outside of the LCP area in Crystal Cove State Park (PA 17).

Although the applicant modified the project with the addition of the water quality enhancement program and the wetlands/riparian mitigation program, the detention basin in Muddy Canyon creek, within a designated Category "B" ESHA was still being proposed. The detention basin was inconsistent with the ESHA policies of the certified LCP which dictates that all development be setback 50 feet from "blueline streams" that are designated ESHA Category "A" and "B", unless specifically excepted. The Muddy Canyon detention basin would have resulted in the loss of 0.12 acres of riparian wetlands. The detention basin location was further inconsistent with the Backbone Drainage Plan of the LCP which locates all detention basins out of the major streams and locates them either within the development areas or on tributary drainages. The applicant had also not demonstrated that the proposed detention basin was sited in the least environmentally damaging location and that there were no other feasible locations outside of the major

drainage course, through possible redesign of the subdivision. Therefore, the project as previously proposed, even with the water quality and wetlands/riparian mitigation, was inconsistent with the ESHA policies of the LCP.

The project 's drainage and runoff management plan as previously designed also significantly increased the rate of stormwater runoff over pre-development conditions. The peak rate of increase was kept at 8.5% over the existing peak runoff rate only by placing the proposed detention basin within Muddy Canyon creek, inconsistent with the LCP. The significant increase in the peak runoff rate and the detention basin in the creek had the potential of adversely impacting the natural erosion/beach sand replenishment process, inconsistent with the LCP Runoff Policies.

The project as previously proposed also reduced the amount of sediment that is normally discharged to the ocean through Los Trancos and Muddy Canyons and the culverts along the frontal slopes of Pacific Coast Highway by as much as a 97% reduction along one segment of the beach. The applicant asserted that this loss of sediment is not significant in terms of beach nourishment but provided inadequate evidence, very late in the staff project review period, supporting the assertion that the proposed project was consistent with the Erosion and Beach Nourishment Policies of the LCP, despite the loss of sediment.

Finally, the project as proposed had potential destabilizing impacts to Muddy Canyon and its creek downstream of the proposed Muddy Canyon detention basin including within Crystal Cove State park. There were also unanswered questions as to whether the change in the movement of sediment through the canyons had a destabilizing effect on the streams.

At the January 2000 meeting the applicant expressed a desire to redesign the project to eliminate the detention basin within Muddy Canyon creek and requested a postponement of the hearing. In the six months following the postponement the applicant further modified the project and provided numerous technical studies to support their contention that the project as modified to eliminate the Muddy Canyon detention basin and replace it with four additional detention basins within the proposed residential development areas and a commercial area outside of the appeal jurisdiction (PA 14).

A bridge was also proposed to replace the Muddy Canyon detention basin thereby eliminating 0.12 acres of wetland fill. The applicant also hired consultants Peter Mangarella, Eric Strecker and Seth Gentzler to review their proposed water quality enhancement program and made revisions to the program including the addition of "regional" Drainpac filters and other additional water quality features.

The applicant commissioned numerous technical studies, some of which had been previously requested by staff, including hydrology, sediment yield, coastal processes and water budget studies, among others in support of their assertion that the proposed

residential and recreational development is consistent with the LCP erosion, sediment, and runoff policies and the protection of the natural streams and off-shore ESHA. As agreed to by request of the Commission, the applicant also funded an independent third party review of the hydrologic, sediment yield and coastal processes studies. The independent third party review effort by Ronald M. Noble, Noble Consultants and Professor Robert L. Wiegel was directed by a Hydrology Scope of Work prepared by the Executive Director.

The revised de novo project was then rescheduled for the Commission's August 10, 2000 Commission meeting at which time the applicant made further revisions to the proposed project. The revisions, among other things included: extension of time for diversion of nuisance runoff flows to the Orange County Sanitation District sewage treatment facility from October 15 to October 31st of each year; and an agreement to undertake and maintain the approved development consistent with the applicant's 7/27/00 letter to the Department of Parks and Recreation; agreement to size the proposed drainpacs to 25% of hydraulic conductivity and ensure that the proposed detention basins are designed to prevent resuspension of first flush material; and rerouting stormwater flow from PA 3A, 3B and 14 through drainpacs or through water quality detention basin number 6.

On August 10, 2000 the Commission approved the de novo application subject to 20 special conditions. That action is detailed in the Revised Findings staff report also scheduled to be adopted on the Commission's March 12, 2001 agenda (Item 9a). Following the Commission's approval of the project the Santa Ana Regional Water Quality Control Board issued a Cease and Desist Order (CDO) No. 00-87on November 16, 2000 requiring The Irvine Community Development Company, the Department of Parks and Recreation, Caltrans and the Laguna Beach Unified School District to comply with the Ocean Plan prohibition of discharges of waste to the Irvine Coast Area of Special Biological Significance (ASBS) (Exhibit 3). In response to the CDO the applicant has revised the approved master drainage and runoff management plan to eliminate all storm flows and non-storm waste runoff discharge to the 30-inch storm drain, the 3 ft. by 4 ft. box culvert and the 24-inch storm drain. The revised runoff management plan has been submitted to the Commission as a permit amendment application and is the subject of this staff report. The amendment application also includes a request to modify the water quality Special Conditions 14 through 19 due to the proposed runoff management plan changes and newly discovered information concerning difficulty in complying with Special Condition 16.

B. PREVIOUSLY APPROVED PROJECT AND PROPOSED AMENDMENT

1. Approved Project

The project is located in the unincorporated southern coastal Orange County area in the Newport Coast (formerly Irvine Coast) segment of the LCP planning area. Specifically, the project site is located North of PCH, West of Crystal Cove State Park and East of the

City of Newport Beach (Exhibit 1).. The project site is characterized by undeveloped natural hillside slopes and canyons. Although no development exists on the property, it was previously farmed and grazed by cattle in the past. The western project boundary is Los Trancos Canyon. The western side of Los Trancos Canyon is built out with residential, golf course and tourist commercial hotel development and the Los Trancos Beach Public Parking Lot adjacent to PCH (PA 2B, 2C, 10B, 13B, and 17, respectively). To the east of the project boundary is Crystal Cove State Park (PA 17) and beyond the state park is approximately 2,000 acres of wilderness open space area that has been/will be dedicated to the County of Orange as the Irvine Coast Wilderness Regional Park (Exhibit 2).

On August 10, 2000 the Commission approved coastal development permit A5-IRC-99-301. The project involves approximately 980 acres of undeveloped moderate to steeply sloping hillsides, canyons, and ridges (referred to as Planning Areas (PA) 4A, 4B, 5 (and the northeastern portion of PA 2C) and includes a large lot subdivision and approval of Vesting Tentative Tract Map 15447, for future residential development (up to 635 homes) and private recreation development (32 acres), 298.5 acres of dedicated open space lands (PA 12E and 12G) and the construction of backbone infrastructure (drainage facilities, utilities, roads, etc. Also approved were minor boundary adjustments between the planning areas and technical revisions to the previously proposed VTTM 15447 to reflect the changes in grading that was necessitated by the redesigned detention basin plans.

Mass grading, including remedial work, totaling 48,191,680 cubic yards (cy) was approved. Grading in Crystal Cove State Park within The Irvine Company's retained easement was also approved. The approved project also results in impacts to 0.4 acres of Needlegrass due to the required widening of the existing 3,800 ft. long fire access road in one location and due to approved residential development in PA 4A and PA 5 (Exhibit 4). The project will mitigate the loss of Purple Needlegrass through the creation of a 1.6 acre Southern Coastal Needlegrass grassland (4:1 ratio) adjacent to an existing healthier stand of Needlegrass located away from the existing fire access road.

The approved project also involves the fill of 0.05 acres of seasonal wetlands in PA 4A in conjunction with residential development and mitigation of the fill of the wetlands by constructing three seasonal wetlands totaling 0.40 acres at the top of a knoll in the adjacent conservation area PA 12E. The Commission also approved additional wetland/riparian mitigation necessary to obtain an Army Corps of Engineer (Corps) 404 permit and as a part of the approved water quality enhancement program. The wetland/riparian mitigation and monitoring plan, prepared by LSA Associates, Inc. and revised May 16, 2000 creates or enhances a little over 3 acres of wetlands creation, expansion and enhancement within the project area and off-site mitigation at San Joaquin Marsh to mitigate temporary stream and non-wetland waters impacts. The approved project includes the construction of a 34-foot wide, 40-foot high bridge to access the private recreation site (PA 12C) located on the opposite side of Muddy Canyon. The

bridge will cause shading impacts on 40.5 sq.ft. or 0.0009 acres of riparian wetlands within Muddy Creek. The approved revised wetlands/riparian mitigation plan also includes mitigation for these shading impacts.

Finally, the approved project also includes the implementation of a water quality improvement program. The water quality enhancement program includes frequent vacuum street sweeping; the installation of debris and contaminant filters in selected catch basins and storm drain outlets; diversion of dry weather nuisance runoff to the local sewage treatment plant; and the construction of wetland/riparian mitigation areas which serve the dual purpose of mitigation for the loss of wetlands and other non-wetlands waters required by the Army Corps of Engineers (ACOE) for a 404 permit approval and filtering runoff as a component of the water quality program. Components of the water quality enhancement program are located in areas outside of the original Appeal Area, namely in PA 3A, 3B, 14 and potions of 1C, 2B, 2C, 10B, 11B, 12B, 13A and 13F. These areas are referred to as the" Non-Appeal Areas" by the applicant. However, the Commission found in its approval of the coastal development permit that if the areas outside of the original Appeal Area receive Appeal Area runoff that must be treated by the approved water quality enhancement system located within the Non-Appeal Areas in order to be found consistent with the certified LCP, then the water quality enhancement program features located in the Non-Appeal Areas come under the Commission's jurisdiction in the Appeal and De Novo actions as well as any subsequent actions concerning the water quality enhancement program.

2. Proposed Project Amendment

Following the Commission's August 10, 2000 approval of the revised project the Santa Ana Regional Water Quality Control Board issued a Cease and Desist Order 00-87(CDO) on November 16, 2000 requiring that The Irvine Company, the Department of Parks and Recreation and Caltrans comply with the Ocean Plan prohibition of discharges of waste to the Irvine Coast ASBS (Exhibit 3)*.* In response to the CDO the applicant has revised the approved master drainage and runoff management plan to eliminate all runoff discharge to the 30-inch storm drain, the 3 ft. by 4 ft. box culvert and the 24-inch storm drain. The revised master drainage and runoff management plan has been as a permit amendment and is the subject of this staff report.

The subject amendment application, submitted on December 18, 2000, and revised on January 19 and 20 and February 23, 2001 requests modification to the approved master drainage and runoff control plan to eliminate all storm flows and non-storm runoff discharge from any portion of the Newport Coast Planned Community (the original Appeal Areas and Non-Appeal Areas) to the existing 30-inch storm drain pipe, the 3 foot by 4 foot box culvert and the 24-inch storm drain pipe (Exhibit 5). These changes are being proposed in order to comply with Cease and Desist Order No. 00-87 of the California Regional Water Quality Control Board.

Specifically, the applicant proposes to reroute the approved storm drain system located in the original Non-Appeal Areas (PA) 3A and 14 to redirect all flows to Los Trancos Canyon and Muddy Canyon creeks instead of discharging to the existing 30-inch storm drain, the 3 foot by 4 foot box culvert and the 24-inch storm drain. Also proposed is the enlargement of Detention Basin 6 located in the PA 14 from 29 acre-feet to 49 acre-feet capacity and the addition of a new detention basin (#7) also in PA 14 in order to slow down and filter the rerouted flows before they are discharged into Muddy Creek. These changes are graphically depicted on Exhibit 6, "Proposed engineering solution to eliminate storm flow discharge to all minor culverts under PCH and detain and filter the water quality flows". Full scale engineering plans were also submitted supporting the changes graphically depicted on Exhibit 6.

As depicted on Exhibit 6, the applicant will be rerouting partial flows from PA 4A that previously discharged to the 30-inch storm drain to Detention Basin 4. "First flush" flows from a portion of PA 4A that flow to Basin 4 in the approved plan will be redirected to the new water quality Detention Basin 7 to be detained for 40 hours for water quality filtering purposes. A portion of the storm flows (5.5 cfs) from Basin 4 will also be redirected to Basin 7 for flow attenuation purposes. Storm flows from PA 4A that were previously flowing through Basins 5 and then discharging into the 30-inch pipe through Line "A" will now be redirected to the existing 48-inch pipe that discharges into Los Trancos Creek. The portion of Line " A" that lies below the connection to the 48-inch Los Trancos storm drain pipe will be abandoned in place and plugged so that no Appeal Area or Non-Appeal Area flows from the Newport Coast project site will discharge through the 30-inch pipe. The applicant's engineering consultant, Hunsaker and Associates, further explains how project flows will be separated and redirected from the existing 30-inch, 3' by 4' and 24-inch culverts (Exhibit 7):

> "When the reconstruction is complete, there will be a physical separation between the existing culverts and the proposed storm drain that will intercept existing flows and direct them to Muddy Canyon or Los Trancos Canyon. The ends of the existing culverts will be bulk-headed. There will be a physical separation between the new storm drain and the existing culverts of 2-10 feet. There will be no flows from the proposed storm drain lines to the existing culverts in Pacific Coast Highway ."

The new Detention Basin 7 is actually a series of two basins that are connected to Detention Basin 6 that was approved under the original project. Basin 7 is located in commercial planning area PA 14 in the location of previously approved vegetated swales. Basin 7, like Basin 6, is a water quality drawdown basin that will detain and filter first flush nuisance flows. The water quality benefits of Basins 6 and 7 are further discussed in the following section of this report.

Added water quality benefits to the proposed master drainage and runoff management plan modifications are that the first flush flows from Drainage Area L-1 located tributary to Los Trancos Creek will now be redirected to water quality Basin 6. Basin 6 is being enlarged to accommodate this additional first flush flow. Under the approved master drainage and runoff management plan the nuisance flows and storm flows from Drainage Area L-1 discharged directly into upper Los Trancos Creek after being filtered through Drainpacs, frequent street

sweeping and other water quality measures. The storm flows from this Drainage Area will continue to discharge to Los Trancos as approved in August 2000. Storm flows from PA 4A that flowed through Detention Basin 3 under the approved plan will also now flow through the new Basin 7 and Basin 6 so that under the amended project all first flush flows tributary to Muddy Canyon will receive 40 hour detention and the rate of flow be reduced prior to discharge into lower Muddy Canyon creek and ultimately discharge onto Crystal Cove State Beach and the Irvine Cove ASBS.

In order to further reduce the post-development peak runoff rate to Los Trancos Creek and to avoid the possibility of increased streambed scour or degradation seaward of PCH during the 100-year flood event, the applicant is also proposing to modify an existing detention basin located in the Newport Coast Golf Course. The basin is located in the vicinity of Hole number 3 and is referred to as Basin L3. The proposed basin revisions include increasing the basin storage capacity and modifying the outlet structure. With the proposed modification to the golf course detention basin the applicant is able to keep the post-development peak runoff rate for the 100-year event at the pre-development rate(Exhibit 8, page 2).

The applicant further proposes changes to water quality Special Conditions 14 through 19 of the approved coastal development permit due to the above proposed changes to the master drainage and runoff control plans or due to newly discovered information indicating difficulty in accessing and maintaining flow-weighted equipment required in Special Condition 16.

The Commission notes that even after the elimination of all storm flows and non-storm runoff discharges from the applicant's Newport Coast development site that there will still be discharge onto the beach and into Los Trancos Creek from the three existing storm drain facilities. One or more of the three culverts also convey storm runoff from the Pacific Coast Highway pavement. This project amendment will not modify the existing PCH catch basins maintained by Caltrans. Pacific Coast Highway runoff and discharge issues must be addressed by Caltrans, also named in the Cease and Desist Order.

Only the segment of the master drainage and runoff management (storm drain) plan and the water quality enhancement program located in PA 3A, PA 14 the Newport Coast Golf Course are being proposed to be modified under the subject amendment request as detailed above. Therefore the amended project involves no additional impacts to the upper reaches of Los Trancos or Muddy Canyon creeks or to wetlands or Purple Needlegrass**.** The modifications to the approved master drainage system occur to the underground storm drain and water quality enhancement systems in close proximity to PCH and do not involve additional impacts to Los Trancos or Muddy creeks above the proposed changes. However, the amended project will slightly change the size of some of the Drainage Areas in order to control the peak runoff rate as required in by the LCP.

Therefore the amendment application also includes new hydrologic analysis to assure that the post development peak runoff rate does not exceed the existing peak storm runoff rate by more than 10%. The new information is in the form of several addenda to the

original April 2000 Hydrologic Analysis by Tettemer and Associates (Exhibit 8). The applicant also submitted addenda to the coastal processes analysis prepared by Scott A. Jenkins and Joseph Wasyl, dated 12/20/00 and 1/7/01 (Exhibit 9). Finally, a sediment yield analysis of the revised project was prepared by Howard H. Chang dated 1/7/01 (Exhibit 10). The third party independent reviewer of the originally approved project, Ron Noble of Noble Consultants, Inc. also reviewed the report addenda as well as the revised master drainage and grading plans and additional hydraulic calculations for the new detention basins (Exhibit 11).

C. LCP CONSISTENCY

1. MARINE RESOURCES PROTECTION

Water Quality and related Resource Protection LCP Policies

The LCP Resource Conservation and Management Policy E designates the off-shore coastal waters as ESHA Category "C" due to its diverse marine life and kelp beds and recognizes its designation as a Marine Life Refuge by the Department of Fish and Game (DFG) and an Area of Special Biological Significance (ASBS) by the Water Resources Control Board. LCP. ESHA Policy E. states:

> **E. CATEGORY "C" ENVIRONMENTALLY SENSITIVE HABITAT AREA POLICIES**
>
> The protection of water quality in marine resource areas is subject to the authority of the State Water Resources Control Board". Protection of water quality is provided by the LCP Runoff Policies and will be reviewed by the Regional Water Quality Control Board in conjunction with subsequent coastal development permits and related environmental impact reports (EIRs).
>
> A water quality monitoring program shall be submitted to the Regional Water Quality Control Board prior to initial implementing approvals for the golf course, for the purpose of monitoring runoff entering the ocean as well as the riparian corridors. Copies of the results of the monitoring program shall be forwarded to the Regional Water Quality Control Board and the County of Orange on a regular basis for their review to determine whether corrective action is required pursuant to the authority of said agencies.
>
> Use and application of chemicals on the golf course and other landscape areas shall be limited to those approved by State, County, and Federal agencies. The landowner shall be responsible for notifying tenants and/or prospective initial purchasers of this requirement.

The Irvine Company proposes to amend CPD A5-IRC-99-301 approved by the Commission on August 10, 2000. Revisions to the drainage and runoff control plans approved under this CDP, as proposed, are necessary, in order for The Irvine Company to comply with a Regional Water Quality Control Board (RWQCB) (Santa Ana) issued Cease and Desist Order (CDO). On November 16, 2000, the Board issued CDO # 00-87, naming The Irvine Company (TIC), pursuant to regulations governing direct discharge in areas designated by the State Water Resources Control Board (SWRCB) as Areas of Special Biological Significance (ASBS) (Exhibit 3). Policies and standards applicable to Areas of Special Biological Significance are found in the Statewide Ocean Plan.

The Commission approved development pursuant to CDP A5-IRC-99-301, included a Master Drainage and Water Quality Enhancement Program. This plan contained master drainage facilities, water quality treatment control and enhancement features and provisions for operation, maintenance, monitoring activities and reporting. The Commission approved the plan, subject to conditional terms, one of which involved applicant compliance with State and Regional Water Quality Control Board Regulations.

Post-development drainage plans for the project involved discharge through several outlets into Muddy and Los Trancos Creeks, and through a 30 inch RCP located near the mouth of Los Trancos Creek, which discharges seaward of Pacific Coast Highway (PCH). Muddy and Los Trancos Creeks are tributary to the ocean waters in Crystal Cove. Therefore the ultimate receiving water body for project runoff discharged into the Creeks and through the 30" RCP, is the ocean water in Crystal Cove. Crystal Cove has been designated by the SWRCB as an Area of Special Biological Significance (ASBS), and is also a marine life refuge. As such, Crystal Cove is afforded special protection.

Water Board regulations relevant to development approved under CDP A5-IRC-99-301, include those in effect pursuant to NPDES permits (General Construction and Municipal Stormwater), 401 Permit Waste Discharge Requirements (WDRs), and applicable provisions contained in the Ocean Plan.

At the time of the Commission action on August 10, 2000, the RWQCB had acted on the proposed development issuing a Waiver of WDRs pursuant to the applicant's request for 401 certification. The RWQCB's action on the 401 permit was based on project conformance with specific Waiver criteria. Relevant criteria, among other, on which the Waiver was based, included the following:

> The project shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Board or the State Water Resources Control Board, as required by the Clean Water Act.

In conducting its' analysis pursuant to 401 certification, the RWQCB sought and relied on SWRCB guidance regarding the applicability of Ocean Plan provisions governing direct discharges to Areas of Special Biological Significance, to the proposed project. The

State Board informed the RWQCB, that the direct discharge prohibition pertaining to ASBS, was not applicable to the proposed project, because the drainage plans (described above) for the proposed project did not constitute any direct discharge to the ASBS. Based in part on this guidance, the RWQCB found the project met the criteria for a Waiver of WDR pursuant to 401 Permit Certification requirements. In addition the RWQCB clarified for the Commission, the water board regulations to which the project would be subject, which included the Construction General permit and the Municipal Stormwater permit, mentioned above.

Therefore, based on the applicant's proposed project and drainage plans, and the RWQCB's determination on the 401 Water Quality Certification and associated direct discharge issue, at the time of the Commission's action on August 10, 2000, condition compliance (which involved project compliance with applicable State and Regional Water Board regulations) would not have necessarily mandated a significant change to the final drainage plans.

However, in September of 2000, the RWQCB staff re-reviewed the project approved under CDP A5-IRC-99-301, in light of concerns about whether the project would comply with the State Ocean Plan prohibition of direct discharges of waste to the Irvine Coast ASBS. Based on this review the RWQCB found that existing drainage facilities utilized by the Irvine Company, and planned (proposed) drainage facilities would result in the discharge of stormwater and non-storm flows directly to the ASBS via several discharge points. Therefore the Santa Ana RWQCB prepared CDO # 00-87. The RWQCB's action in November of 2000, approving the CDO in consideration of relevant water board regulations, thus affects the validity of previous Board action, particularly the WDR 401 Waiver.

Specifically, in order for the Waiver to remain in effect, The Irvine Company must comply with the CDO. In order to comply with the CDO, significant revisions to the previously approved master drainage plans are necessary. TIC's master drainage plans for the proposed development have to be revised, to eliminate all planned direct discharges to the ASBS, which according to the RWQCB included waste (nonpoint source runoff) proposed to discharge through the 30 inch RCP, per post-development drainage plans approved by the Commission on August 10, 2000, and existing direct discharges of waste associated with drainage plans approved by the County CDP PA 97-0152 (Exhibit 12).

In order to comply with the CDO, the Irvine Company is proposing to eliminate planned and existing discharge through all of these points (the 30 inch RCP, 3 X 4 foot box culvert, and a 24 inch RCP) in the post-development condition, by rerouting flows to alternate discharge points located in Los Trancos and Muddy Canyon, and to utilize facilities approved under CDP A5-IRC-99-301 to accommodate flow from development approved by the Commission in August of 2000, as well as from development approved by the County.

In order to accommodate the additional flow, some facilities approved in August, such as storm drains and the extended detention basin (Basin 6) will have to be expanded and/or otherwise modified as more fully described in the project description, and new facilities are proposed to be developed and utilized. For example, a new detention basin is proposed (Basin 7) which will function in conjunction with Basin 6, in providing peak flow attenuation and water quality treatment of stormwater.

Development compliance, as amended, with post-development peak runoff rate policies established to protect sediment transport, channel stability and beach replenishment, are discussed in the following section of this report. Development compliance with water quality policies of the LCP, as amended, is discussed below.

Water Quality Analysis

The amendment project description fully describes the proposed changes to the storm drain system and associated peak attenuation and water quality treatment control facilities. The particular modifications to storm drains and facilities proposed for alteration which may affect water quality in project receiving waters follow:

1) Storm drain modification involving the elimination of connections from project area to storm drains located under PCH, and rerouting of this runoff to either Muddy or Los Trancos Creeks;

2) The rerouting of stormwater runoff ("first flush") from significant areas of the project site to a proposed new Basin 7, which then also flows to Basin 6;

3) The expansion of extended detention Basin number 6, and the addition of a new Basin (#7), which will replace the vegetated swale in PA 14;

4) And the upgrade of the design of Basin 6 to include additional water quality features. Both Basins 6 and 7 will include berms to reduce short-circuiting and spread out flows, and include a sand/soil biofiltration system outlet.

The Irvine Company asserts that the amended plan will, in addition to fulfilling the primary objective of eliminating all discharge through the three outlets described above, maintain and enhance the water quality treatment control program. It will do so by maintaining all previously proposed source and treatment control measures, with the exception of the replacement of the vegetated swale in PA 14 with a double linear detention basin (which will be vegetated), and by routing runoff from a larger amount of the tributary area to water quality treatment basins, specifically Basin 6, or to both Basins 6 and 7.

Further proposed is the enhancement of Basins 6 and 7. The applicant's consultant indicates that a sand/soil filtration area will be included in both of the basins. This will

include the use of vegetated sandy soils with underdrains to filter stormwater through the bottom of the basin at a slow rate.

In order to ensure the rerouting of additional flow to Los Trancos and Muddy Canyon would not result in post-development peak discharge from points upstream of PCH exceeding pre-development levels by more than 10%, consistent with LCP requirements, detention basin 6 which provides a dual function of water quality treatment and peak flow attenuation, had to be expanded, and an additional basin (# 7) has been added. Thorough analysis and discussion of proposed hydrology and related channel transport and sediment yield issues associated with the amended drainage plans are provided below.

With regard to the effect of the amended plans on water quality, the applicant's engineering and water quality consultants, Dick Hunsaker and Eric Strecker respectively, have provided information documenting the capacity of the new and expanded basins. The basins will handle stormwater runoff for water quality treatment purposes as proposed in the amended plan, by providing a 40-hour drawdown time for the capture goal volume identified as the "first flush" (quantified as the first ¾ of an inch of runoff). (Exhibits 14 and 15).

The adjustment in drainage facilities and drainage routing plans proposed, will increase the amount of project area from which the "first flush" of stormwater runoff will receive the benefit of extended detention. The percentage of tributary area directed to extended detention basins designed to provide water quality treatment (Basin # 6 or 6 and 7) has increased roughly from 64.8% in the plans approved in August 2000, to 95.0% per the amended project plans.

Basins 6 and 7 will provide dual functions; peak flood flow attenuation, and water quality treatment through settling and biofiltration. Basin 7 will operate in conjunction with Basin 6, and provides an additional 4.6 acre feet of capacity. The detention volume of Basin 6 itself has been slightly reduced from 12.6 to 12 acre feet, in order to provide peak flood attenuation for runoff from the larger tributary area. Therefore, the combined storage capacity of these two basins provides an increased 4 acre-feet over the storage capacity of Basin 6 alone as approved in the original project.

While the revised water quality management system was not re-evaluated with the modeling approach utilized previously by the applicant's consultants (Mangarella, Strecker and Gentzler), in a letter addressed to Roberta Marshall dated 1/18/01[revised version of 1/12/01], Eric Strecker explained that re-modeling the system did not appear necessary because:

1) the resulting system is expected to result in enhanced water quality over the system analyzed at that time; and
2) the previous report found that the water quality would be acceptable.

Further, it is believed that "the enhancements to the system are very positive and will result in improved water quality of stormwater and dry-weather flows over what was originally analyzed in our report" (Exhibit 15).

The Commission notes, a letter from the RWQCB dated 1/19/01 indicates that they have reviewed the plans identified as "Submittal to the California Coastal Commission" dated January 17, 2001, and found that based on the information provided in that plan, when implemented, TIC's amended plans would result in project compliance with the CDO (Exhibit 16).

Further the Commission finds that, with respect to project runoff, the proposed modifications will amend the permit in a manner which is expected to enhance the capability and function of the water quality management system associated with the development, further minimizing potential impacts on water quality in receiving waters. Therefore, the Commission finds the proposed modifications to the master drainage plan and water quality enhancement system are consistent with all applicable policies of the Newport Coast LCP.

Proposed Changes to Special Conditions

Along with the proposed changes to the master drainage and water quality enhancement plans approved in August 2000, the applicant is requesting the Commission amend water quality related Special Conditions 14-19. According to the applicant, condition changes are either (1) necessitated by the revised plan or (2) based on new information on the difficulty of access and maintenance of flow-weighted equipment (this applies to condition 16). (Exact changes proposed are shown in Exhibit 5, pages 11-27).

The applicant requests the Commission amend Special Conditions 14, 15, 16 and 18, to accurately and comprehensively describe all of the Planning Areas which will be affected by these Special Conditions as a result of the amended project, and, where applicable, to reference the revised plans per the amendment proposal. In addition there are minor non-substantive grammatical changes proposed in some cases.

The Commission finds that incorporating the proposed changes with respect to the revised language which refers to the plans as amended, and the comprehensive description of all planning areas affected by the Special Conditions per the amendment, is essential to ensuring development conformance with the Newport Coast LCP, in light of the amendment.

Additionally, the Commission finds that some further modifications to these Special Conditions (14, 15,16 and 18) are necessary to correct typographical or other errors in reference to the dates of revised plans and/or reports (this applies to 14-16 and 18), and

in reference to the number of monitoring station locations pursuant to Special Condition 17 (this applies to 17 B (2)), more fully described as follows:

In Special Conditions 14, 15, 16 and 18, all references to the *Newport Coast Planned Community Stormwater Quality Evaluation Report*, shall be amended where necessary to correctly reference the report dated 6/14/00, and letter amendment thereto dated 1/18/01[the 1/18/01 letter is a revised version of an original 1/12/01 letter].

In Special Condition 17B (2) the language shall be amended to correctly reference the four (4) subsections which identify monitoring station locations as specified within the Condition, as opposed to three (3).

The more substantive changes to aspects of SCs 14 & 16 and to 17 and 19 are described and discussed below.

Special Condition 14

Specific to SC 14, the proposed change is associated with the detention basin(s). At the Commission hearing on August 10, 2000, the Commission incorporated a requirement on detention basin design into the CDP, based on a recommendation from Dr. Stenstrom, consultant to the Department of Parks and Recreation (DPR) (for background refer to IRC staff report with revised findings). The requirement in substance was that detention basins be designed to prevent resuspension of sediment and solids (which had previously settled) from occurring during large storm events. The Irvine Company asserts that this requirement is appropriate as applied only to detention basin(s) which were designed to provide water quality treatment function which involves the settling of sediment and solids; specifically Basin # 6, and not 1,2,and 3 as the condition requires. In addition however, based on the revised plans as proposed per this amendment, the new Basin (#7) will be providing a water quality treatment function, and therefore this requirement is applicable to this basin in addition to 6, but not to Basins 1,2 or 3.

The Commission finds that the application of this design requirement to all of the detention basins proposed at the August hearing was done based on a literal interpretation of Dr. Stentstrom's recommendations (adopted by State Parks) contained in a letter from DPR to Sara Wan dated August 4. 2000(Exhibit 46 of the Revised Findings staff report for the August 2000 action on the coastal permit)).

The Commission finds that critical to maintaining the efficacy of an extended detention basin, in settling and containing material, is the provision for a design which prevents resuspension and flush out of settled material during large storm events. Further, the Commission finds that the project as proposed per the amendment includes 2 detention basins which are designed to provide a water quality treatment function primarily through settling and containing material, secondarily through biofiltration. The other detention basins were (in August) and continue to be proposed to provide peak flood attenuation;

they are flow through basins not drawdown basins, and as such should not retain significant amounts of sediment or other particulate matter which might then be susceptible to resuspension during large storm events.

Therefore, the Commission finds that upon critical consideration of the recommendation on which the requirement was based, the requirement remains applicable to Basin 6, and is applicable to Basin 7 per the project as amended, but not to other Basins (1, 2 or 3). The Commission finds the intent behind this requirement will be fulfilled when applied to detention basin #'s 6 and 7 only, and therefore amends Special Condition 14B (2)h in this way.

Special Condition 16

Special Condition 16 C. (1) of CDP A5-IRC-99-301 required the applicant to (in conjunction with the post-development BMP efficacy monitoring plan required by SC 16) utilize a flow-weighted composite sampling approach to sample runoff water quality in Muddy Canyon downstream of the extended detention pond and the wetland located at the agricultural reservoir, from 3 storms per year. This requirement was based on the applicant's water quality consultant's (Eric Strecker) recommendation. Since the time of the Commission action however, the applicant 's consultant and TIC have discovered a previously unidentified constraint, which would make the use of the flow-weighted composite sampling approach below the agricultural reservoir, as is required by 16 C. (1) difficult or impossible to comply with because it is " likely too dangerous to sample at this location using a flow weighted sample collection or any other method ". The constraint is the result of conditions and issues characterized as " steep terrain, lack of road access for accessing wetlands, slick road and trail conditions during storms and recognizing that flow-weighted equipment must be maintained during and shortly after storm events".

Due to these factors, the applicant requests that SC 16 be amended to allow flow - weighted composite samples to be taken downstream of Basin 2 (upstream of the ag. reservoir), unless storm or site conditions prevent safe collection of samples using this approach, in which case composited grab samples would be utilized. The applicants support their expectation that a flow-weighted composite sampling approach can be utilized downstream of Basin 2, based on a meeting held with their civil engineer, and express their desire for flexibility despite their preference for automated collection, for the aforementioned reasons (Exhibit 13).

Mr. Strecker opined, in a letter to Roberta Marshall of ICDC, dated 1/18/01 regarding sampling approaches, " that composited grab samples will be sufficient to assess the overall effectiveness of the system from an effluent quality perspective"(Exhibit 13).. Mr. Strecker points out however, that since "the site is upstream of the pond and wetland system, the data generated from this site would likely not be as low in concentrations as sampling downstream of these systems".

The Commission finds that due to the site-specific conditions, the sampling approach required in the location described, as "below the agricultural berm" per SC 16C(1) may not be feasible. Therefore, the alternative approach proposed to be used below Basin # 2, above the agricultural berm, is acceptable. This location should provide a more conservative sample because the water will not yet have the benefit of biofiltration processes associated with the wetland, and therefore should provide useful data as a part of the post-development monitoring program required by SC 16.

Special Condition 17

Special Condition 17 addresses the Water Quality and Marine Ecological Monitoring Program for the Crystal Cove Development Project. TIC is requesting the Commission amend SC 17 to eliminate the reference to, and requirement associated with, a sampling location identified as a point " on the seaward side of Pacific Coast Highway, at the mouth of the watershed [Los Trancos], directly downstream of the auto bridge in the Crystal Cove Historic District, at a point which will allow sampling of discharge from the 48" RCP and the 30 " RCP above the surf zone".

TIC requests this change because, as a result of the amended plan, there will be no discharge from the project area exiting the 30-inch RCP seaward of PCH, in the post-development condition. In addition the applicant proposes to add language to the description of the location of a sampling station which is to be located near the mouth of the watershed, but above (east) of PCH, in order to require that this station be situated such that the sample will include discharge from the 48 inch RCP. Based on the revised drainage plans, the Commission finds that with the proposed language added to ensure sampling of project discharge from the 48 inch RCP above the surf zone, this and the other sampling stations will be located appropriately, so as to ensure the collection of useful and necessary data for fulfilling the intent of the Monitoring Program, in a manner consistent with applicable LCP and Coastal Act Policies.

Special Condition 19

The Irvine Company is requesting the Commission amend Special Condition 19, based on the revised drainage plans proposed. Special Condition 19 addresses the flow-meter detection devices. At the August 10, 2000 hearing, the Commission found that due to the importance of the diversion system in eliminating existing sources and preventing new sources of dry-weather nuisance runoff from development flowing to the beach directly or through Los Trancos or Muddy Canyon Creeks, it was necessary to have in place a monitoring system for detecting dry-weather flows in the event the diversion system failed or other system inadequacies occurred.

Concerns prompting this condition stemmed in part from public testimony regarding the occurrence of large volumes of nuisance flow discharging though Los Trancos Creek and through a 3 X 4 box culvert which discharges directly to the beach just south of Los Trancos Creek. In order to address these issues, Special Condition 19 requires flow – meter detection devices to be installed at points where they will be capable of detecting

and estimating dry-weather runoff (runoff which is required to be diverted) in the event such runoff is being discharged directly to the beach, or to Los Trancos or Muddy Canyon Creeks, and then on to the beach.

The Irvine Company is requesting the Commission amend SC 19 to limit the flow-meter detection devices to the wet wells located near the mouth of Los Trancos and Muddy Canyon Creeks. The applicant makes this request based on the modifications proposed to the storm drain system, which will in effect re-direct both low flows and storm flows to the Creeks. In the dry weather season, the wet wells are the mechanical means for conveying nuisance flow to the Orange County Sanitation District. Therefore should the pumps fail, having flow meter detection devices situated in a location capable of detecting flow into the Creeks should be adequate. Further, the applicant asserts that it will be physically impossible for flows to escape through the culverts [30 inch and 3X4] because, per plans, the upstream ends of the pipes/culverts will be bulk-headed. (Exhibit 5, page 29, Exhibit 7).

The Commission finds that as a result of the modifications to the drainage plans, to re-direct flow away from the 30 inch RCP, the 3 X 4 box culvert and the 24 inch pipe to other discharge points in Los Trancos and/or Muddy Creeks, and to disconnect and incorporate physical blockades into the storm drain system to prevent flow from directly discharging to the beach, amending Special Condition 19 in order to limit the location of the flow-meter detection devices to the wet wells, where they must be capable of being engineered to detect and estimate dry-weather nuisance runoff discharging into Los Trancos or Muddy Canyon Creeks, in accordance with the provisions of SC 19, will adequately fulfill the intent of the Condition and therefore ensure development compliance with applicable policies of the Newport Coast LCP.

The Commission finds in consideration of applicable LCP policies, the proposed amendment is in conformance with the Newport Coast LCP.

2. STREAM SEDIMENT SUPPLY AND BEACH NOURISHMENT IMPACTS

a. Applicable LCP Sediment and Runoff Policies

The Resource Protection Program Findings of the Newport Coast (formerly Irvine Coast) LCP states, in part:

> The major objective of the Erosion and Urban Runoff Management for The Newport Coast is to assure that erosion and runoff rates do not significantly exceed natural rates, while at the same time assuring sand replenishment provided within the coastal watershed is maintained. (The Newport Coast littoral "cell" is limited and partially dependent on the local watershed for sand replenishment.)

The LCP contains erosion control, sediment and runoff policies to carry out the above objective of preserving the beach sand replenishment process while maintaining the stability of the natural streams. LCP Sediment Policy J.4 states:

> **J**. **SEDIMENT POLICIES (in part)**
>
> 4. Sediment movement in the natural channels shall not be significantly changed in order to maintain stable channel sections and to maintain the present level of beach sand replenishment.

Further, Runoff Policy K.1 states:

> **K. RUNOFF POLICIES (in part)**
>
> 1. Peak flood discharge rates of storm water flows in the major streams shall not exceed the peak rate of storm water runoff from the area in its natural or undeveloped state, unless it can be demonstrated that an increase in the discharge of no more than 10% of the natural peak rate will not significantly affect the natural erosion/beach replenishment process.

b. Project Setting

The proposed project is within an area identified as the Crystal Cove Littoral Sub-Cell. The east jetty of Newport Harbor and Abalone Point, near Laguna Beach bound the longshore extent of this sub-cell. The inland boundary follows the upland watershed divide and both Los Trancos Canyon and Muddy Canyon are sediment sources for this littoral sub-cell.

There have been many modifications to this sub-cell both to the supplies of sediment to the sub-cell and to the transport through the sub-cell. The biggest impact was the construction of the Newport Harbor jetty system that began in 1918. By 1936, the jetties were built out to water depths of about –50' Mean Sea Level. These jetties block most sediment from being transported from the Balboa Peninsula to any of the beaches south of the jetties (Jenkins and Wasyl, 2000, pg. 52).

The Crystal Cove Sub-Cell now consists of a number of pocket beaches that are stabilized by shore normal rock outcrops that have formed a natural groin system. The beaches that form between these outcrops are thin veneers of sand over wave cut platforms. Since completion of the Newport Harbor jetties, these pocket beaches have

become relatively stable, with the sand losses balanced by the influx of new material from the terraces, streams and dredge disposal. (Noble, 2000, pg. 2)

c. Peak flood discharge rates

The project as approved by the Commission in August 2000 will substantially alter the drainage, erosion and sediment deposition of the project site as approved, 86 acres that were naturally in the Los Trancos watershed would be graded to drain to Muddy Canyon. Under the proposed project amendment, the project site will be graded to drain slightly differently in some locations in order to keep the peak discharge rates to no more than 10% over the existing peak runoff rate. Development in both watersheds will not change as a result of the project amendment and will include 224.2 acres of impervious surfaces (130.8 for Los Trancos and 93.4 acres for Muddy Canyon); 180.4 acres of common irrigated area (116 acres for Los Trancos and 64.4 acres for Muddy Canyon); 92 acres of residential irrigated areas (56.2 acres for Los Trancos and 35.8 acres for Muddy Canyon); 710.9 acres of fuel modification and natural canyon areas in Los Trancos; 64.6 acres of fuel modification area for Muddy Canyon and 625.8 acres of natural canyon area in Muddy Canyon.

Under the approved project both watersheds will have a large increase in water inputs for the summer months, due to irrigation. Total water inputs to Los Trancos will decrease primarily due to the reduction in the watershed area. Muddy Canyon will have an increase in total water inputs due to the increase in watershed area and to irrigation. The increase in impervious surface will cause an increase in volume of runoff in both watersheds. Under the approved project six detention basins were proposed to control drainage in the watersheds and reduce post-project peak flows. However, under the proposed amended project a new detention basin is being proposed, Detention Basin 7 and approved water quality Detention Basin 6 is being redesigned and enlarged from a capacity of 29 acre-feet to 49 acre-feet. New Detention Basin 7 is located just above PCH, in PA 14 (future commercial site) and is also designed as a water quality basin. The new detention basin replaces the vegetated swales that were approved as a part of the water quality enhancement program under the approved project.

Under the approved project, flood discharge of storm water flows in Muddy Canyon and the 25-year and 100-year peak discharge of storm water flows in Los Trancos Creek shall not exceed the peak rates of storm water runoff from the area in its natural or undeveloped state. The 5-year and 10-year peak flood discharge of storm water flows from Los Trancos Creek will exceed the peak rates of storm water runoff from the area in its natural or undeveloped state; but the increase in discharge is less that 10% of the natural peak rate. For Muddy Canyon, peak 100-year flows are modeled to be 960 cfs for pre-project conditions and 952 cfs for post project conditions for the project as approved in August 2000. (John Tettemer and Associates June 2000, December 2000). However, under the proposed project amendment the Muddy Canyon peak 100-year

flows for post project conditions will be 1021 cfs representing an increase of 6.4% over the existing storm peak runoff rate. The increased peak runoff rates for the proposed amended project are allowed if they do not exceed the existing rate by more than 10% and do not significantly affect the natural erosion/beach processes

Under the amended project, the peak flood discharge rate at the Muddy Canyon arch culvert will be slightly increased for the 5-, 10- and 25-year storm when compared to the approved project post-development runoff rate (Chang, 2001). However, LCP Runoff Policy K.1 limits the peak runoff rate to an increase of no more than 10% over the pre-development or existing peak runoff rate. When comparing the amended project peak post-development runoff rate with the pre-development or existing peak runoff rate the modeled results indicate that for Muddy Canyon there is an increase of 6.4% for the 100-year storm, a 1.4% increase for the 2-year storm and decreases in the peak runoff rate for the 5-, 10- and 25-year storm events. The increase is not due to a modification of the watershed but instead due to the additional flows that would have been discharged through the existing 3' by 4' box culvert and the 24-inch storm drain that are now being diverted in Basin 6. Detention Basin 6 is being enlarged to accommodate the diverted flows as well as the addition of a new detention basin, number 7.

For Los Trancos, peak 100-year flows were modeled to be 1,637 cubic feet per second (cfs) for pre-project conditions under the approved project and it was proposed to be reduced to 1,563 cfs for post project conditions. Under the amended project for Los Trancos Canyon, the post-development peak runoff will be slightly increased over the approved peak runoff rate for all but the 5-year storm event. However, when comparing the amended project peak runoff rates for Los Trancos to the existing peak rates, as required by the LCP, the modeled results indicate no change for the 100-year storm event (Tettemer 2000). The amended project post-development peak runoff rate for the 5-, 10- and 25-year storm event all decrease from the existing peak runoff condition. Only the amended project post-development peak runoff rate for the 2-year storm event will increase over the existing rate and will do so by 7.4%. The 100-year peak flows will remain at 1, 637 cfs for both the existing and amended post project condition for Los Trancos Canyon.

Similarly, the post development peak runoff rates of the 25-, 10-, 5- and 2-year storm events were modeled for the proposed amended project for both Los Trancos and Muddy canyons. The hydrologic analysis indicates that the post development peak runoff rate for the 2-year storm event for Los Trancos will increase by 7.4% after development. The 25-year storm event will show an increase of 2.2% after development while the 10-year and 5-year peak runoff rate will decrease by 0.4 and 11.2%, respectively, over the existing peak runoff rate. For Muddy Canyon, the 2-year storm event is modeled to show a small increase (1.4%) in the peak runoff rate after development while the peak runoff rates of the 25-, 10- and 5-year storm events will decrease below the existing peak rate with the greatest decrease (18.1%) occurring during the 10-year storm event (Tettemer and Associates, December 2000).

While LCP Runoff Policy K.1. requires that the post-development peak runoff rate not exceed the existing peak rate by more than 10% the policy also requires that any increase in the peak storm runoff rate not significantly affect the natural erosion/beach replenishment process. With implementation of the beach sand replenishment program outlined in Special Condition 6 and discussed further below, the above stated increases in peak flood discharge of storm water flows will not significantly affect the natural erosion/beach sand replenishment process. Therefore, the Commission finds the project as conditioned consistent with Policy K1 of the certified LCP.

Post-project peak flow durations in the amended project will continue to be far longer than pre-project peak flow durations to accommodate the increased runoff volume. At some locations in both watersheds, the peak flows for smaller events (5-year, 10-year and 25-year events) are projected to be larger for post-project conditions than for pre-project conditions. These increases will occur within the limits defined in Policy K1 of the certified LCP.

d. Channel stability

LCP Policy D1 states, in part, that:

> …the natural drainage courses and natural springs will be preserved in their existing state…

LCP Policy J4 elaborates on two aspects of this requirement:

> Sediment movement in natural channels shall not be significantly changed in order to maintain stable channel sections and to maintain the present level of beach sand replenishment.

The matter of beach sand replenishment is addressed in the following section. In this section, the issue of channel stability within Muddy and Los Trancos Canyons is discussed. Consistency with the LCP also requires that there will be no significant scouring or erosion of the channel bed. Bank undercutting and collapse is not a significant erosion mechanism in Muddy and Los Trancos canyons in that, for the most part, no banks are developed in these steep-sided, canyon-defined streams.

The Commission found that the project as approved in August 2000 resulted in a reduction in the amount of both coarse- and fine-grained sediments carried by Muddy and Los Trancos canyons (Chang, 2000). Further, the duration of peak flow (storm) events will be far longer than pre-project peak flow durations to accommodate the increased runoff volume (Tettemer, 2000). These conditions raised the concern, expressed by some of the appellants and by EPA, that the streams will become more erosive, leading to instability of the channel sections. The proposed amended project will

likewise result in a decrease in the amount of coarse- and fine-grained sediments as verified through an addendum to the applicant's May 2000 sediment yield study prepared by the original author, Howard H. Chang (Chang 2001). However, the changes being proposed to the master drainage and runoff management plan under the subject permit amendment occur immediately upstream and downstream of the existing PCH culverts and no further changes are proposed along Muddy or Los Trancos canyons upstream of the modified drainage facilities as noted above in the description of the amended project. Therefore there are no further changes in sediment delivery except for the short reach of each stream near the PCH culverts. Although the changes in the discharge near PCH are small in the amended project, any change in discharge may potentially affect the water-surface profile, flow velocity and sediment transport to the beach in the vicinity of PCH (Chang 2001).

In the approved project, the greatest reduction in sediment volume as a result of development is expected in the finest size fractions—silt and clay (Chang, 2000). Most of this material is carried in the wash load of streams; that is, it is carried in suspension without interacting with the bed of the stream. The amount of wash load is driven by sediment supply—it will be reduced as a result of development primarily because of the increase in impervious surfaces and in changes in the nature of vegetation cover. The loss of wash load as a result of development will not, as the appellants claim, result in increased erosion, incision, or destabilization of the banks. These processes depend on the shear stress of the water upon the stream's bed and banks and not on the amount of sediment in the wash load. Accordingly, increased erosion is not expected as a result of the reduction of fine sediments that will occur as a result of development.

The Commission also found that under the approved project there also will be modest reductions in the sediment yield in the coarser size fractions—sand and gravel. Most of this material is carried in the bed load of a stream; that is, it is rolled along or bounced along the bed of the stream. A stream has a certain capacity to carry materials as bed load. Thus, the amount of bed load is driven not only by sediment supply, but also by the shear stress of the water (a function of velocity) and by the percentage of its capacity that is occupied. Thus, if a stream is carrying its maximum bed load capacity for a given flow velocity, then a reduction in sediment supply may be compensated for by increased erosion of the stream's bed. There are two reasons why, in the case of Los Trancos and Muddy canyons, such increased erosion is not likely to occur to any significant amount. First, it appears that the coarse sediment supply is currently not high enough to ensure that the streams presently are carrying their bed load capacity. Thus, the bed load may, like the wash load, be limited by the supply of sediment in pre-development conditions. In fact, the relatively low sand and gravel yields estimated for Muddy Canyon (Chang, 2000) suggests that the stream is not near its bed load capacity in its current state. Second, there is evidence that much of the bed of Muddy Canyon is armored (Tettemer, 2000; David Pryor, personal communication)—that is, the bed consists either of bedrock or of boulders so large that they cannot be moved by all but the largest floods. Armored streambeds are not subject to scour. Los Trancos canyon appears to be less well-

armored, and may be subject to somewhat more scouring. The approved development will have far less impact on Los Trancos canyon than on Muddy Canyon, however, and significant increases in scour are not anticipated.

Finally, although post-development peak discharge rates will, in most cases, be kept at pre-development levels or even reduced also under the proposed amended project, the duration of flood events will be greatly increased as a result of the detention of some of the runoff and the greater volume of runoff resulting from the development. Longer flood events could lead to greater scouring, even if peak discharges are not appreciably increased. Because of the armoring of Muddy Canyon mentioned above, however, increased scouring was found by the Commission not likely to be significant in the approved project. The same finding can be made for the amended project. For Muddy Canyon, the changes in the runoff management system will raise the water surface and therefore slow down the flow on the upstream side of PCH during high flow events. Under the amended project, for discharges greater than the 5-year flood the backwater will be slightly higher than that under the approved plan. For 2-year flood discharges, the flood backwater flows will be lower under the amended plan than the approved plan (Exhibit 10). With this change in the backwater condition there is a small reduction of sediment transport and a slight increase in sediment deposition in the area just upstream of the Muddy Canyon 6 ft. by 8 ft. arch culvert (Chang 2001).

However these small changes will not affect the amount of sediment delivered to the beach under the amended project due to the fact that Muddy Canyon creek is in an approximate state of equilibrium. Any sediment that is built up above the equilibrium stream bed is removed gradually. Further, the short reach of the stream above the culvert is a reach of sediment transfer and not a reach of sediment storage in the long term (Chang 2001). Therefore, according to the conclusions of the addendum sediment yield study, the proposed changes to the Muddy Canyon drainage will not affect the sediment delivery to the downstream side of Pacific Coast Highway.

The effect of the proposed changes to the drainage system at Los Trancos Canyon will have a similar negligible effect on sediment delivery to the beach. As stated above, the changes to Los Trancos are limited to the changes immediately upstream of the 9 ft. by 10ft. PCH arch culvert and changes to the existing golf course detention basin in Drainage Area L3. Although the Los Trancos arch culvert is larger than the Muddy Canyon culvert a backwater effect is still caused during high flows causing changes to the water-surface and flow velocity on the upstream side. For most flood discharges the flood stage will be slightly lower under the amended plan than the approved plan (See Exhibit 10, Fig.2 of Chang 2001). Consequently with this change there is a small increase of sediment transport and a small decrease in sediment deposition just upstream of the Los Trancos arch culvert. However, these changes will not cause significant changes in sediment delivery through this reach of Los Trancos creek just upstream of the culvert also due to the fact that the channel at this location is in an approximate state of equilibrium. Further, sediment deposition occurs during high flow backwater conditions.

The backwater disappears during low flows of any event and the deposited sediment is also removed during these low flows, according to Chang. The short reach of Los Trancos just above the arch culvert is an area of sediment transfer and not an area of storage or a source of sediment supply, similar to the area upstream of the Muddy Canyon arch culvert. For this reason, the modifications being proposed in the project amendment will not affect sediment delivery to the beach on the downstream side of the Los Trancos 9 ft. by 10 ft. arch culvert.

Thus as explained above, the proposed amended development will not result in an increase in scour of Muddy or Los Trancos Canyons, and the stability of the channel cross section should be maintained consistent with LCP policies J4 and D1. This has not been the case in the past in Los Trancos canyon, as a result of existing development in its watershed the channel side slopes downstream of the PCH arch culvert are relatively steep and have been subject to scour, including during the 1997-98 El Nino season. The Department of Parks and Recreation have repaired the slope damage downstream of the culvert. The approved development was found to have little additional effect on Los Trancos canyon because the watershed of Los Trancos canyon is little impacted by the approved development. Most of the runoff would be diverted into Muddy Canyon where it would be discharged into the stream immediately upstream from the Pacific Coast Highway. Under the amended project, flows to Los Trancos will be further modified due to the changes to the existing golf course detention basin, and due to the fact that 5.5 cfs of storm flows and all first flush will now be diverted to the new Detention Basin 7 and approved Detention Basin 6 which is being enlarged.

e. Changes to natural erosion/beach sand replenishment process

Certified LCP Sediment Policy J4 requires that sediment movement in the natural channels shall not be significantly changed in order to "maintain the present level of beach sand replenishment." This policy is a recognition of the fact that LCP approved development will cause some changes to the conditions of the natural channels or Blueline streams. Accordingly, the proposed project must be reviewed to ensure that it "maintains the present level of beach sand replenishment."

The Commission found in the August 2000 approval of the original project that changes in peak discharge events will change the sediment transport characteristics of both Los Trancos Creek and Muddy Canyon. In predicting the total sediment yield from watersheds and fine-grained material (wash load) and coarser material (bedload) were treated differently. Yield of the fine-grained material (such as silts and clays) correlates well with supply and can be estimated from the characteristics of the drainage area. Yield of the coarser material (sand, gravel, and cobble) is limited by either the availability of sediment or the flows that have enough energy to carry sediment. Once on the beach, the fine material tends to remain in suspension and will be quickly carried from the beach. The coarser material will remain on the beach and contribute to the littoral

sediment supply. Due to the different transport mechanisms and fates of these materials, they are regularly modeled differently.

The changes to the watersheds under the approved project were found to reduce the available supplies of fine-grained sediment. The computed annual average yield of fine material are 694 tons for pre-project conditions and 164 tons for the approved post-project conditions (Chang, 2000, pg. 5). No error analysis or sensitivity analysis was provided with this study; however, an overall summary report provided by the applicant noted that "the accuracy of individual estimates are on the order of $\pm$ 50% (Inman, Jenkins and Masters, 2000A, pg. 23.) This reduction in fine sediment yield of 530 tons per year under the approved project will reduce the volume of fines in the nearshore area. Since fine material can be a detriment to water quality and visibility, a reduction in fines can benefit overall nearshore water quality. For the proposed amended project, the delivery of fine-grained sediment is not affect by the proposed drainage modifications that will occur in the lower reaches of the canyons just above the PCH culverts (Chang, 2001).

For coarse sediment yields, both Los Trancos and Muddy Canyon, in general, have more sediment available than there is stream flow available to erode or carry the material and are called capacity limited (as opposed to supply limited). Therefore changes to flow characteristics will change the sediment transport and the amount of inland material that will reach the beach. For the approved project, a 100-year flood series was created and used to predict pre-project and post-project average annual sediment transport rates. The flood series was made up of various peak storm events that can be expected to occur during a 100-year period. The approved development will result in a 23.8 ton/yr. reduction in sand-sized coarse sediment from the two watersheds combined (Chang, 2000, pg. 7), a 12.1 ton/yr. reduction of fine sand and a 172.1 ton/yr. reduction in coarse sand, gravel, cobble and boulders. The overall reduction in all coarse sediment will be 208 tons/year under the approved project (Chang, 2000, pg. 6). For the proposed amended project the applicant's consultants again modeled values of mean annual delivery of coarse sediment for Muddy and Los Trancos canyons (Chang 2001). The conclusions of the modeling is that the sediment deliveries for different sediment size fractions for the amended project are very similar to the corresponding values for the approved project (See Exhibit 10, pg. 6,). A comparison of the coarse sediment deliveries at the outlet of the Muddy Canyon culvert for the approved plan and the proposed amended plan shows that there is a slight decrease (0.4tons/year) in the loss of sediment (Chang, 2001, pg. 9).

Under the proposed amended project the loss of beach grade coarse sediment (0.18-0.80mm) for both watersheds is 13.9 cubic meters per year compared to the approved project which resulted in a loss of 14 cubic meters per year of beach sediment (Jenkins and Wasyl, 2001). An analysis of the overall sediment loss by watershed shows that there is an additional incremental loss of 0.2 cubic meters per year of beach size sand in the yield for Muddy Canyon creek but the sand yield at Los Trancos Canyon is increased

by 0.3 cubic meters per year to offset the loss at Muddy Canyon. Further, according to the applicant's consultant, the amended runoff management plan will result in an increase the yield of beach grade sand and all grades of beach substrate (0.62 mm – 32.0mm) from watershed sources by 0.8% when compared to the approved plan (Jenkins and Wasyl, 2001, pg. 3). In approving the plan in August 2000 Commission agreed with the applicant's consultants that the effects of the 23.8 tons/year (18.3 cubic yards per year or 14 cubic meters per year) reduction in sand-sized coarse sediment was well within the annual fluctuations of sediment within the Crystal Cove Sub-Cell. Based on conservative estimates of volumes of beach sand within the entire Crystal Cove Sub-Cell, this 23.8 ton/yr. decrease would represent about 0.005% of the existing beach sand volume (Jenkins and Wasyl, 2000, pg. 2). The amended project would result in a loss of 13.9 cubic meters of sand-sized coarse sediment per year (23.6 tons/year).

Both peak flows and sediment yields vary greatly from wet period events and dry period events and the applicant's' consultants also provided estimates for the approved project of sediment yield reductions for wet and dry period conditions. In the approved project sediment yield during wet years is about 2.8 times higher for wet periods versus dry periods (Jenkins and Wasyl, 2000, pg. 51). The approved project will result in a reduction in sand-sized coarse sediment of 10.5 cubic yards per year (8 cubic meters per year) for dry periods and 32.9 cubic yards per year (25.2 cubic meters per year) for wet periods (Jenkins and Wasyl, 2000 pg. 52 The Commission found that this cumulative loss over a 20 year period would be 24 cm (10 inch) of net retreat of the mean high tide line. This is insignificant relative to the natural cycles of beach retreat and recovery that cause net excursions in the mean high tide line of as much as 8 meters during the wet climate period. Under the amended project the 20 year cumulative effect of the amended runoff management plan will reduce the landward recession of the mean high tide line by 2 mm during a wet period (where the total cumulative post-project beach retreat is reduced from 24 cm to 23.8 cm). During a dry period the 20 year cumulative effect of the amended project will reduce beach retreat by 1mm (12.9 cm of post-project beach retreat compared to the 13 cm that was calculated previously by the consultant in the approved project) (Jenkins and Wasyl, 2001, pg.5). The applicant's consultant concludes that the incremental shoreline changes under the proposed amended project relative to impacts already reviewed in the August 2000 approved project are smaller than the modeling error limits and are therefore not significant.

Along with the proposed amended plans to the runoff management plan the addendum to the original April 2000 hydrologic analysis prepared by Tettemer and Associates (revised December 2000, and a second addendum to the December 2000 revisions dated January 8, 2001), the addendum to the original May 2000 sediment yield analysis prepared by Howard H. Chang (dated January 7, 2001) and the addendum to the original May 2000 coastal processes analysis prepared by Scott A. Jenkins and Joseph A. Wasyl (Jan.7, 2001) were all reviewed the original independent third party reviewer, Ron Noble of Noble Consultants, Inc. After the receipt of additional information concerning the information contained in the addenda to the previous studies and the project plans,

the third party reviewer agrees with the findings and conclusions of the above reports (Exhibit 11).

The projected changes in sand-sized beach material are small, but quantifiable reductions in beach sand. These reductions may result in impacts that are small in comparison to current changes in the littoral system; however they constitute new changes that can be directly attributable to the proposed project. The reduction in fine sediment can be viewed as a positive water quality impact from the proposed project, but this does not offset the anticipated impacts to sand supply.

The project as amended will also result in an annual reduction in coarse beach material, other than the material that compares in size with the average composition of sand now found on the beach. The amended project will reduce the total coarse sediment yield by 208 tons per year, or 160 cubic yards per year (122.3 cubic meters per year). According to the original coastal processes analysis, these coarser fractions are in the streambeds and were later found in gravel and cobble beds underlying the present beach sand deposits in the neighborhood of the bluff toe. These coarser sediments remain close to the toe of the bluff, and affect the slope of the backbeach. These coarser sediments were not included in the littoral sediment budget or the analysis of how the proposed project will alter the sand replenishment from the watersheds. Nevertheless, the reduction of these coarser sediments to the coast will alter the overall beach profile and beach condition. In particular, this reduction of coarse sediment volume will deflate the dry beach profile.

The Commission found that the approved project-related changes will result in an estimated reduction in total coarse sediment of 208 tons per year, or 160 cubic yards per year (122.3 cubic meters per year) $\pm$ 50%. (Inman, Jenkins and Masters, 2000A, pg. 23) The estimated error for this volume of material, $\pm$ 50% would provide a range from 80 cubic yards per year to 240 cubic yards per year. The provided estimate of 160 cubic yards per year is the median value within this range. This 160 cubic yards per year is a small amount of material when compared to the overall volumes of sand transport in the sub-cell. Total yield of coarse-grained sediment in the sub-cell averages 2,900 cubic yards per year (2,220 cubic meters per year) and net littoral transport averages 1,300 to 1,960 cubic yards per year (1,000 to 1,500 cubic meters per year) southward. (Jenkins and Wasyl, 2000, pgs. 51 and 68) However, this sub-cell has been experiencing a small deficit in total sediment such that over a 20 year period, the average volume of material into the cell averages 1,230 cubic yards per year (941 cubic meters per year) less that the average volume of material leaving the cell. As proposed, the amended project would also incrementally add to and increase this deficit as detailed above.

The project related impacts to sediment supply are all tied to the hydrologic modifications, runoff detention and efforts to maintain the range of peak flood discharge of storm water flows at or below the peak rates of storm water runoff from the area in its natural or undeveloped state. Small reductions in overall peak flows and other

hydrologic modifications will reduce the sediment carrying capacity of the watersheds and reduce sediment transport to the beach areas. On-site retention could substantially increase the amount of coarse material held on site and further reduce the sediment supply to the coast.

As stated above, LCP Policy J4 requires proposed development to "maintain the present level of beach sand replenishment." The impacts to sediment yield can be mitigated by annual replenishment of a comparable volume of beach-quality material. Ideally, the replenishment would add all the coarse-grained material in proportion to the pre-project supply rates and in a way to mimic pre-project distribution of the coarser material. However, for the various reasons provided below, the full range of coarse-grained material cannot be provided as replenishment material. A comparable volume of sand-sized material can approximate, but not replicate the pre-project conditions.

Gravel and cobble are readily identified components of many beaches. However, little is known about gravel and cobble transport mechanisms or whether beach nourishment projects could reestablish the same gravel and cobble distribution that exists currently. The normal method of beach replenishment is to deposit new material over the existing beach and grade the overall slope to match pre-established contours. This technique would not place the coarse gravel and cobble at the base of the bluff. Even if a trench were excavated at the toe of the bluff, it would be difficult to mimic the natural slope or distribution of these coarser materials. If the gravel and cobble were placed in the beach uniformly with the sand-sized material, its initial exposure on the surface would detract from the overall quality of the beach, and there is no available information on how this coarser material will function. Eventually it could settle below the beach surface and could be transported to the toe of the bluff, but there are no studies to assure this or to estimate how long it would take for the redistribution to take place. Due to these uncertainties, a complete replenishment of all the coarse-grained material with coarse-grained materials is not appropriate.

However, beach replenishment using sand-sized material has been undertaken regularly and is well understood. The general distribution and transport of sand-sized material has been studied for the Crystal Cove Sub-Cell and is reasonably well understood. Replenishment by sand-sized material is an appropriate mitigation for the project-related losses of all the coarse material.

In the August 2000 approval of the project the Commission required that a beach replenishment program be established to place approximately 160 cubic yards per year of beach size sand onto beaches in the Crystal Cove Sub-Cell. The applicant has not proposed any changes to the beach sand replenishment requirement (special condition 6). Although the amended project will result in a slight increase in the annual yield of sediment over that of the approved project, the project will still result in the loss of beach grade sand. Additionally, the coastal processes analysis also concludes that the changes in sediment supply are smaller than the modeling error limits and are therefore

not significant. Therefore the Commission finds that the beach sand replenishment requirement is still necessary for the amended project in order to find the project consistent with the applicable LCP policies and the public access provisions of the Coastal Act. The details of the beach sand replenishment program are contained in the Revised Findings staff report dated 2/22/01which is Item 9a on March 12, 2001 Commission hearing agenda.

3. GEOLOGIC HAZARDS

Policy L1 of the certified Local Coastal Program requires that the applicant submit soils engineering and geologic studies that assess potential soil-related constraints and hazards such as slope instability, settlement, liquefaction, or related secondary seismic impacts. Portions of the project are also located in a high fire hazard area (Transcript, p.16, line 5) Policy L1 also requires that approved development incorporate the mitigation measures recommended in the reports generated by these studies. This section describes staff's findings related to geologic hazard issues. Geologic issues involving grading, erosion and sedimentation are discussed in separate sections of this report.

The proposed project lies on a moderately steep hillside adjacent to the coast. The proposed development is on a ridge oriented approximately north-south, perpendicular to the coast, lying between two north-south-trending canyon systems—Los Trancos Canyon to the west and Muddy Canyon to the east. The overall slope of the hillside is moderate (5-10%), but side slopes in the two canyons and its tributaries may be steep to very steep (up to 1:1, or 100%). The geologic conditions are conducive to slope instability, in that many slopes expose bedding planes or other planes of weakness that dip outwards from the slope. Further, the southern half of the area is underlain by the Monterey Formation, a geologic unit known to be susceptible to landsliding. In fact, the area itself is known to be subject to landsliding, and the applicant's geotechnical consultants have mapped numerous active and inactive landslides. Detention basins are planned for planning areas that have the potential to hold storm water on the site, potentially leading to increased infiltration of water into fill slopes, raising additional slope stability concerns.

The applicant has submitted several geotechnical reports in support of the proposed project changes, specifically the new Detention Basin 7 and the enlargement of approved Basin 6. The Commission's senior geologist expressed initial concerns about the stability of the slopes adjacent to Basins 6 and 7. In response to staff concerns the applicant's geotechnical consultants submitted additional slope stability analyses for both static and dynamic (earthquake-loaded) conditions that demonstrate an adequate factor of safety

for the slopes adjacent to the Basins (Exhibit 17). Therefore the amended project is consistent with Policy L.1. of the certified LCP.

The amended project also raised an initial concern as to whether Basin 6 will have adequate spillway capacity to prevent overtopping failure if the outlet drains became clogged during a major storm event. In response to this concern the applicant also submitted additional information from a certified engineering geologist certifying that the spillway is geotechnically adequate and calculations demonstrating adequate capacity for the modeled 100-year storm. Therefore the Commission finds that the revised and new Detention Basins are consistent with LCP Policy L.1.

C. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096 of the Commission's Code of Regulations requires Commission approval of coastal development permit applications to be supported by a finding showing the permit, as conditioned by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect that the activity may have on the environment.

The Commission incorporates its findings on conformity with LCP policies at this point as if set forth in full. For the reasons described in the Commission findings above, the proposed project, as conditioned, will not cause significant adverse impacts to the environment. Specifically, the Commission has required mitigation measures to enable the Commission to find the proposed project, as conditioned, consistent with the biological resources, stream sediment, beach nourishment, geologic hazards, slope stability and water quality policies of the certified LCP. There are no feasible alternatives or mitigation measures available that would substantially lessen any significant adverse impact that the activity might have on the environment. Therefore, the Commission finds that the proposed project is the lease environmentally damaging feasible alternative and can be found consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX A

SUBSTANTIVE FILE DOCUMENTS

1. Irvine Coast (Newport Coast) Certified Local Coastal Program.
2. Local Coastal Development Permit Record No. PA 97-0152).
3. Master Drainage and Water Quality Enhancement Program, NCPC, revised December 10, 1999
4. Southern Coastal Needlegrass Grassland Restoration Plan, Crystal Cove/Newport Coast Phases IV-3 and IV-4, revised December 14, 1999.
5. Wetland/Riparian Mitigation Plan, Crystal Cove/Newport Coast Phases IV-3 and IV-4, revised May 16, 2000.
6. Substantial Issue staff report and Commission findings, A5-IRC-99-301(Irvine Community Development Company), 9/2/99
7. California Department of Fish and Game, 1603 Agreement No. 5-212-99, Irvine Community Development Company, as amended July 17, 2000.
8. California Water Resources Control Board, Waiver of Waste Discharge Requirements and Water Quality Certification for the proposed Crystal Cove/Newport Coast Phases IV-3 & IV-4 Project, (ACOE Reference No. 980071600-YJC), September 30, 1999.
9. Third Party Independent review of Hydrologic, Sediment Yield and Coastal Processes Results and Conclusions for Newport Coast Phases IV-3 and IV-4 Appeal, Ronald M. Noble, Noble Consultants, Inc. and Professor Robert L. Wiegel, June 28, 2000.
10. Newport Coast Phases IV-3 and IV-4 Appeal, Technical Reports, Community Development Company, August 2000.
11. Revised Findings staff report, A5-IRC-99-301(Irvine Community Development Company), 2/22/01.
12. Addendum to the “Newport Coast Planned Community, Revised Runoff Management Plan, Hydrologic Analysis Report, dated April 2000, December 6, 2000, January 8, 2001.
13. Third Party Independent Review Newport Coast Planned Community, Ronald M. Noble, Noble Consultants, Inc., 2/21/01.

APPENDIX B

The following special conditions of coastal development permit A5-IRC-99-301remain in effect and are unaltered by this amendment request:

1. WETLANDS MITIGATION AND MONITORING

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall prepare and submit an addendum to the Wetlands/Riparian Mitigation and Monitoring Plan, by LSA Associates, Inc., dated 5/16/00, subject to the review and approval of the Executive Director, which shall require:

A. The proposed 0.4 acre seasonal wetland mitigation shall be constructed prior to the disturbance of the existing 0.05 acre seasonal wetland located in PA 4A; and

B. Within 180 days following construction of the mitigation wetlands, the applicant shall submit to the Executive Director a monitoring report for review and approval. The report shall determine whether the following performance standard has been met. After construction, the soil in each depression shall be saturated with water to the soil surface and then filled with an additional volume of water not to exceed that which would result from the median of annual peak 14-day cumulative rainfall totals from the 40-year record for Station 4650 (Laguna Beach 2).[1] The depression shall pond this water for at least 7 days. This test shall not take place during a period of natural rainfall. This performance standard is based on the fact that a standard criterion for identifying a hydric soil is that it ponds water for at least 7 consecutive days at least 50% of years (i.e., 50 years out of 100, on average).[2] If the performance standard can not be accomplished, the applicant shall submit an application for an amendment to the CDP for other, equivalent mitigation.

C. The permittee shall monitor and remediate the 0.4 acre seasonal wetland mitigation site in accordance with the approved monitoring program. Any proposed changes from the approved monitoring program shall be reported to the Executive Director. No changes to the approved monitoring program shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

2. REVISED DRAINAGE AND RUNOFF PLANS

[1] Exponent. 2000. Projected water balance for Muddy Canyon, Crystal Cove Area, California. A report to the Irvine Company dated April 20, 2000. p.6.

[2] Natural Resources Conservation Service. 1998. Field indicators of hydric soils in the United States. Version 4.0, March 1998. U. S. Department of Agriculture.

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit revised drainage and runoff plans, for the review and approval of the Executive Director, which shall indicate that no storm flow runoff or nuisance flow runoff from Planning Areas 2C, 5 or 6 shall be discharged into Muddy Creek below the existing agricultural pond berm located in Upper Muddy Canyon.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

3. LOS TRANCOS TUNNEL MAINTENANCE

A. The applicants shall maintain the Los Trancos Tunnel free of silt and mud and in a dry, passable state from April 15th to October 31st of each year, for the life of the development.

B. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant, Irvine Community Development Company, shall execute and record a deed restriction, in a form and content acceptable to the Executive Director, incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel(s). The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

4. ASSUMPTION OF RISK

A. By acceptance of this permit, the applicant acknowledges and agrees (i) that the site may be subject to hazards from fire, landslides and soil erosion; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

B. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant, Irvine Community Development Company, shall execute and record a deed restriction, in

a form and content acceptable to the Executive Director incorporating all of the above terms of this condition. The deed restriction shall include a legal description of the applicant's entire parcel. The deed restriction shall run with the land, binding all successors and assigns, and shall be recorded free of prior liens that the Executive Director determines may affect the enforceability of the restriction. This deed restriction shall not be removed or changed without a Commission amendment to this coastal development permit.

5. CONSTRUCTION PHASE EROSION AND SEDIMENT RUNOFF CONTROL PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and approval, final erosion and sediment runoff control plans and a Storm Water Pollution Prevention Plan (SWPPP) that has been approved by the County of Orange. The approved plan(s) shall be subject to the following requirements and include the following components, at a minimum:

1. During construction, erosion on the site shall be controlled to avoid adverse impacts to adjacent properties, public roadways and the Crystal Cove Area of Special Biological Significance/Marine Life Refuge.

2.The SWPPP to be prepared pursuant to the State Water Resource Control Board (SWRCB) General Construction Activity NPDES Permit, and required by this special condition, shall be designed to comply with the following standards, consistent with the SWRCB regulations:

(a) The applicant shall implement Best Available Technologically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT) to reduce or eliminate storm water pollution.

(b) DISCHARGE PROHIBITIONS:

(i) Authorization pursuant to this Coastal Development Permit does not constitute an exemption to applicable discharge prohibitions prescribed in Basin Plans, as implemented by the nine RWQCBs.

(ii) Discharges of material other than storm water which are not otherwise authorized by an NPDES permit to a separate storm sewer system (MS4) or waters of the nation are prohibited, except as allowed in Special Provisions for Construction Activity, C.3 of the SWRCB General Construction Activity NPDES Permit.

(iii) Storm water discharges shall not cause or threaten to cause pollution, contamination, or nuisance.

(iv) Storm water discharges regulated by this Permit shall not contain a hazardous substance equal to or in excess of a reportable quantity listed in 40 CFR Part 117 and/or 40 CFR Part 302

(c) RECEIVING WATER LIMITATIONS:

(i) The SWPPP developed for the construction activity covered by the SWRCB General Construction Activity NPDES Permit shall be designed and implemented such that storm water discharges and authorized non-stormwater discharges shall not cause or contribute to an exceedance of any applicable water quality standards contained in a Statewide Water Quality Control Plan and/or the applicable RWQCB's Basin Plan, including but not limited to, any applicable standards in the California Toxics Rule and the California Ocean Plan.

(ii) Should it be determined by the discharger, SWRCB, RWQCB, or CCC that stormwater discharges and/or authorized non-stormwater discharges are causing or contributing to an exceedance of an applicable water quality standard, the applicant shall implement corrective measures consistent with 5A(2)c (iii) and (iv) below.

(iii) Where corrective measures would not constitute development under Section 30106 of the Coastal Act, the applicant shall cease grading and/or construction and implement corrective measures immediately following discovery that water quality standards were exceeded, followed by notification to the RWQCB and the CCC by telephone as soon as possible but no later than 48 hours after the discharge has been discovered. This notification shall be followed by a report within 14-calender days to the appropriate RWQCB and the CCC, unless otherwise directed by the RWQCB or the CCC, describing (1) the nature and cause of the water quality standard exceedance; (2) the BMPs currently being implemented; (3) any additional BMPs which will be implemented to prevent or reduce pollutants that are causing or contributing to the exceedance of water quality standards; and (4) any maintenance or repair of BMPs. This report shall include an implementation schedule for corrective actions and shall describe the actions taken to reduce the pollutants causing or contributing to the exceedance. The applicant shall revise its SWPPP and monitoring program immediately, after the telephone report to the CCC, to incorporate the additional BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring needed. Grading and/or construction shall recommence upon the corrective actions being completed to the satisfaction of the Executive Director.

(iv) Where corrective measures would constitute development under Section 30106 of the Coastal Act, the proposed corrective measures shall require an amendment to the coastal development permit, unless the Executive Director determines no such amendment is required.

B. Other Erosion Control Measures

1) The following temporary erosion control measures shall be used during construction activity: a combination of temporary measures (e.g., geo-fabric

blankets, spray tackifiers, silt fences, fiber rolls, straw mulch, hay bales, gravel bags, earth berms or other mechanical or vegetative techniques), as appropriate, during each phase of site preparation, grading and project construction. Native and/or appropriate non-native plant material selected for vegetation shall be consistent with LCP subsection I-3-L-6. Temporary structural BMPs, including debris basins, desilting basins, and/or silt traps shall be incorporated into the erosion control plan. Said plan shall specify that the above noted temporary structural BMPs shall be installed prior to the onset of the wet season (October 15 to April 15) no later than October 15th, and shall be maintained in functional operating condition throughout the season. (October 15 to April 15) The erosion control plan shall also depict the sites and sizes of the temporary structural BMPs for sediment, mudflow and erosion control which are to be implemented prior to and during the wet season. Concurrent with the submittal of this plan to the Coastal Commission, the applicant shall submit a set of plans to the California Department of Parks and Recreation for their review.

2) Following construction, erosion on the site shall be controlled to avoid adverse impacts on adjacent properties, public roadways and the Crystal Cove Area of Special Biological Significance/Marine Life Refuge.

3) The (SWPPP) shall specify BMPs appropriate for use during each phase of site preparation, grading and project construction, and procedures for their installation, based on soil loss calculations shall be submitted. The submitted calculations will account for factors such as soil conditions, hydrology (drainage flows), topography, slope gradients, vegetation cover and groundwater elevations.

4) The plan(s) shall describe the location and timing for the installation and maintenance of all erosion control devices, and shall describe the parties responsible for repair and maintenance of such devices. Erosion control devices shall be installed in conjunction with clearing, grubbing, and grading. Such plan may acknowledge that minor adjustments in the location of temporary erosion control measures may occur if necessary to protect downstream resources.

5) Erosion control measures for grading and construction done during the period from October 15 to April 15 will be implemented by October 15 and maintained as necessary through April 15. For grading and construction commencing in the period from October 15 to April 15, erosion control measures will be implemented in conjunction with the project in a manner consistent with the County of Orange Grading Code. All areas disturbed, but not completed, between April 15 and October 15, including graded pads, shall be stabilized in advance of the rainy season.

6) The plan(s) shall include a strategy to mobilize crews, equipment, and staging areas for BMP installation during each phase of site preparation, grading and project construction, with timing of deployment based on the forecast percentage of rainfall

occurrence. The plan shall also address provisions for delivery of erosion prevention/control materials, or access to onsite supplies, and specifications for adequate storage capabilities.

7) The plan(s) shall demonstrate that landscaping will be installed on all cut and fill slopes in completed areas prior to November 15th of each year utilizing either temporary or permanent (in the case of finished slopes) erosion control methods. Said planting shall be accomplished under the supervision of a licensed landscape architect, shall provide adequate coverage within 90 days, and shall utilize vegetation of species consistent with native and/or appropriate non-native plant material selected for vegetation shall be consistent with LCP subsection I-3-L-6 and surrounding native vegetation, subject to Executive Director approval.

8) A third-party contractor designated by the applicant shall continually evaluate the implementation of SWPPP measures for compliance with this coastal development permit. Monthly reports shall be submitted to the Executive Director for review. In addition any periodic reports produced by government officials conducting inspection of the site for SWPPP compliance shall be submitted to the Executive Director, at the time such reports are provided to the applicant or the RWQCB. The requirement for submittal of such reports shall terminate with completion of construction activity and termination of applicant coverage under the General Construction NPDES permit as determined by the SWRCB or RWQCB.

9) Concurrent with the first phase of construction, as indicated on the August 9, 2000 Phasing Plan, the applicant shall construct and implement a dry weather diversion system consistent with the terms of special condition 15c.

C. The permittee shall undertake development in accordance with the approved grading and erosion and sediment runoff control plans and the SWPPP. No changes to these plan(s) shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

6. IRVINE BEACH SAND REPLENISHMENT FUND

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicants shall provide evidence, in a form and content acceptable to the Executive Director of consent to participate in a fair share program for beach sand replenishment in the Crystal Cove littoral subcell as described below. The applicant shall also provide evidence that $163,800 has been deposited in an interest bearing account designated by the Executive Director in-lieu of providing sand to replace the sand and beach area that will be lost due to the impact of the proposed project. The California Coastal Commission or other entity

designated by the Executive Director shall be named as trustee of this account, with all interest earned payable to the account for the purposes stated below. In no event shall the fair share portion of the applicant's responsibility fall below $163,800.

The purpose of the account shall be to aid in the restoration of beaches within the Crystal Cove littoral sub cell (between the east jetty of Newport Harbor and Abalone Point) through the establishment of a beach sand replenishment program. The funds shall solely be used to establish longterm monitoring of beach sand quantities, to prepare a program for beach sand replenishment, and to implement projects which provide sand to the beaches within the Crystal Cove littoral sub cell (between the east jetty of Newport Harbor and Abalone Point), not to fund operations, maintenance, or planning studies. The funds shall be released only upon approval of an appropriate program by the Executive Director of the Coastal Commission.

7. SLOPE STABILITY

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, a geotechnical report which demonstrates the gross stability of all slopes (natural, cut, and fill) in the proposed development. The report shall be prepared and certified by a licensed geologist (RG) or engineering geologist (CEG). The scale of the analysis shall be at one-inch equals forty feet for the fire access road and PA 12C. All other analysis shall be at the scale of one inch equals one hundred feet. Such analyses shall be prepared as follows:

The plan shall demonstrate:

1) Slope stability analyses shall demonstrate a factor of safety greater than or equal to 1.5 for the static condition and greater than or equal to 1.1 for the pseudostatic condition.

   The plan shall include, at a minimum, the following components:

1) At least one two-dimension quantitative slope stability analysis shall be prepared for each cut slope and each fill slope in the development. The stability of natural slopes adjacent to the development shall be evaluated through supplemental quantitative slope stability analyses.

2) All slope stability analyses shall be undertaken through cross-sections oriented perpendicular to the slope.

3) Pseudostatic slope analyses shall assume a horizontal seismic coefficient of 0.15g.

4) All slope analyses shall be performed using geotechnical parameters (friction angle, cohesion, and unit weight) determined from undisturbed samples collected on the site.

5) The choice of geotechnical parameters for each geologic unit examined shall be supported by direct shear tests, triaxial shear test, or literature references from intact and/or remolded samples in order to characterize the conditions in each slope.

6) All slope stability analyses shall be undertaken with potentiometric surfaces for the highest potential groundwater conditions.

7) If anisotropic conditions are assumed for any geologic unit, strike and dip of weakness planes shall be provided, and geotechnical parameters for each orientation shall be supported by reference to pertinent direct sheer tests, triaxial shear test, or literature.

8) When planes of weakness are oriented normal to the slope, or dip into the slope, or when the strength of materials is considered homogenous, rotational failure surfaces shall be sought by Spencer's method through a critical failure search routine to analyze the factor of safety along postulated critical failure surfaces.

9) If anisotropic conditions are assumed for units containing critical failure surfaces determined above, and when planes of weakness dip in the same direction as the slope, factors of safety for translational failure surfaces also shall be calculated. Geotechnical parameters for such weak surfaces shall be supported through direct sheer tests, triaxial shear test, or literature references.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

8. REVISED GRADING PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit revised grading plans to the Executive Director for review and approval. The scale of the plans shall be at one inch equals forty feet for the fire access road and PA 12C. All other plans shall be at the scale of one inch equals one hundred feet. The revised grading plans shall show the following:

1) provide a schedule showing when each stage and element of the project will be completed, including estimated starting and completion dates, hours of operation, days of week operation, and the total area of soil surface to be disturbed during each stage of grading;

2) Show the location of all on-site stockpiling which shall be approved by the County of Orange. Top soil for later use in revegetation shall be stockpiled on-site in previously designated and approved areas. Other earthen material shall be disposed at locations approved by the County of Orange provided that a coastal development permit has been finally issued for locations in the coastal zone to receive this quantity of earthen material;

3) Removal of natural vegetation will be limited to graded areas, access/haul roads, and areas required for fuel modification. Construction material shall be limited to the approved area to be disturbed except for approved haul roads; and

4) All grading will conform to the County of Orange Grading Ordinance.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

9. FUEL MODIFICATION AND LANDSCAPING PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit fuel modification plans, subject to the review and approval of the executive director, for all areas where future development will abut natural areas. All fuel modification plans shall be reviewed and at a minimum, conceptually approved, by the Orange County Fire Authority. All fuel modification plans shall be in conformance with the requirements of the Development/Open Space Edges Policies of the certified Newport Coast LCP. No fuel modification shall occur in Planning Area (PA) 17 Crystal Cove State Park, including within the applicant's retained easement area within PA 17.

B. Landscaping plans conceptually approved by the County of Orange, which are in conformance with the applicable landscaping and habitat and visual resources protection policies of the LCP shall also be submitted for the review and approval of the Executive Director.

C. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

10. FINAL FIRE ACCESS ROAD PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit final plans at 40 scale, subject to the review and written approval of the Executive Director, for the widening and paving of the existing fire access road located between PA 4A and PA 5. The final plans shall be reviewed and approved by the Orange County Fire Authority and the Irvine Ranch Water District. The plans shall show that the road is designed to avoid impacts to Purple Needlegrass to the maximum extent feasible, consistent with the Southern Coastal Needlegrass Grassland Restoration Plan, by LSA Associates, Inc., dated December 14, 1999. Accordingly, the road may be realigned but shall be widened to a maximum of 14 feet where it abuts existing Purple Needlegrass vegetation. The existing Purple Needlegrass vegetation shall be flagged and fenced prior to grading activities and shall be protected from impacts during road construction.

If any Purple Needlegrass is destroyed or significantly impacted other than that indicated on Exhibit 2 of this report and Exhibit 2 of the Southern Coastal Needlegrass Grassland Restoration Plan, by LSA Associates, Inc., dated December 14, 1999, the applicant shall mitigate the loss of the additional Purple Needlegrass at a ratio of 4:1 in the same location as the proposed mitigation site. If the mitigation site is too small to accommodate the required additional restoration, the biological consultant shall identify another suitable site within the project vicinity, subject to the review and written approval of the Executive Director.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

11. CONFORMANCE WITH FINAL GEOLOGIC RECOMMENDATIONS

A. All final design and construction plans, including foundations, grading and drainage plans, shall be consistent with all recommendations contained in the June 6, 2000 report by NMG Geotechnical, the August 6, 1999 and August 30, 1999 reports by Goffman, McCormick and Urban, and the Leighton and Associates letter of 16 June, 2000 and subsequent supplemental reports. **PRIOR TO THE ISSUANCE OF THE COASTAL**

DEVELOPMENT PERMIT, the applicant shall submit, for the Executive Director's review and approval, evidence that an appropriate licensed professional has reviewed and approved all final design and construction plans and certified that each of those final plans is consistent with all of the recommendations specified in the above-referenced geologic evaluation approved by the California Coastal Commission for the project site.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

12. BRIDGE PLANS

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit revised plans, subject to the review and written approval of the Executive Director, for the proposed Muddy Canyon bridge located in PA 17. Plans shall be to scale and include a site plan on a topographic base map (or grading plan), plan views, elevations and cross-sections. All bridge supports and abutments must be shown in relationship to the wetlands located in Muddy Canyon and must avoid all such wetlands. The plans shall be reviewed and approved by the Department of Parks and Recreation prior to submittal.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

13. EVIDENCE OF EXECUTION AND RECORDATION OF OFFER TO DEDICATE FEE TITLE TO OPEN SPACE LANDS

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, written evidence that an offer to dedicate fee title to Planning Areas (PA) 12E and PA 12G has been executed and recorded, consistent with the Land Dedication Policies of the certified Newport Coast LCP. The offer to dedicate in fee PA 12E shall be made to the County of Orange and shall irrevocably limit the use of PA 12 E to open space and conservation purposes. The offer to dedicate in fee PA 12G shall be made to the County of Orange or the California Department of Parks and Recreation and shall irrevocably limit the use of PA 12G to open space and recreation purposes.

20. STATE PARKS CONDITIONS

Applicant shall undertake and maintain all development governed by CDP A5-IRC-99-301 in accordance with all conditions of approval of CDP A5-IRC-99-301 and, pursuant to the terms of the proposed project description, consistent with the July 27, 2000 letter to Tim La Franchi of State Parks and Recreation from Daniel C. Hedigan of the Irvine Company.